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THE SCRIPTURE-THEORY OF THE EARTH.

THE SCRIPTURE-THEORY OF THE EARTH,

THROUGHOUT ALL ITS

REVOLUTIONS,

AND ALL THE

PERIODS of its EXISTENCE,

From the CREATION,

To the final RENOVATION of all THINGS.

By the Author of, *An Eſſay on Redemption.*

LONDON,

Printed for J. and F. RIVINGTON, in St. Paul's Church-yard. MDCCLXXIII.

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ER-

ERRATA.

Page 18. line 10. *for* higheſt, *read*, lighteſt.
20. l. 13. *for* reative, *r.* creative.
26. l. 3. *dele* comma *after* ſpirits.
107. l. 8. *for* ſence, *r.* fence.
129. l. 22. *for* ſidereal, *r.* ſideral.
142. l. ult. *for* terram *r.* terras.
255. l. 8. *r.* that when it did.

THE SCRIPTURE THEORY OF THE EARTH.

THE INTRODUCTION.

WE have had two different theories of the earth, the productions of two countrymen of our own; both ingenious; both admired for the time; and both, I think, fallen into disrepute, and now generally exploded; because they were founded on hypotheses, neither of which had any

very probable foundation in nature or reaſon, nor much countenance from ſcripture; to ſay no more of them.

Theſe two celebrated writers led the way to ſeveral others, both at home and abroad; who ſet themſelves likewiſe to excogitate hypotheſes concerning the ſyſtem of the earth; which have all equally proved the ſhortneſs of our line to fathom the great abyſs of the Creator's works; which, to mere human abilities, *are unſearchable, and whoſe ways are paſt finding out.*

The preſent attempt hath this to plead in its behalf, that it is not built upon hypotheſis, but ſtands on much ſurer grounds, the unerring word of God: Whether the ſuperſtructure doth in any meaſure correſpond with the foundation, or whether it be only mere *hay and ſtubble*, the reader will judge.

The moſt certain knowledge of nature is moſt aſſuredly to be learned from the Author of nature, if he hath made any diſcoveries of this kind.

This

This he hath not profeſſedly done: He hath not thought fit any where to deliver a regular ſyſtem of the philoſophy of nature. But he hath done what we may preſume is better; what is more adequate to our underſtandings; and what they may better, and with better ſucceſs, be employed upon: He hath given us a general hiſtory of the principal phenomena and revolutions of nature. The divine wiſdom hath, in this reſpect, acquainted us, in his holy word, with many important facts, which we could never otherwiſe have attained to the knowledge of; and he hath incidentally interſperſed many intimations in it, concerning the paſt, and even future ſtate of the earth, which convey much real knowledge; and hath left us to make proper improvements upon the whole.

It is an excellent obſervation of Dr. *Burnet's*, "That it was never the deſign of providence to give ſuch particular explications of natural things as ſhould make us idle, or the uſe of reaſon unneceſſary; but on the contrary, by delivering great concluſions

ſions to us, to excite our curioſity and inquiſitiveneſs after the methods by which ſuch things were brought to paſs: But it may be, as he adds, there is no greater trial or inſtance of natural wiſdom, than to find out the channel in which theſe great revolutions of nature which we treat on, flow and ſucceed each other *.

The very firſt thing that occurs to us in the divine oracles is an account of the creation of the world; a very conciſe one indeed, but very methodical and comprehenſive: Nor have we any other genuine hiſtory of the production and formation of all things — how this earth came into being — how long it hath continued in it — nor of what changes and revolutions it hath undergone; but that which the ſcripture furniſheth, particularly in the *Moſaic* hiſtory of the creation and deluge; much leſs can we pretend to any knowledge of the future ſtate, duration, diſſolution, and renovation of the world, but from the ſame divine writings;

* Dr. *Burnet's* theory of the earth, book I. chap. vi.

which

which make ſome revelations concerning theſe things. We cannot therefore have any ſo ſure a foundation to proceed upon in this enquiry as what the Scripture affords us: And this is ſtill the ſafer bottom to reſt upon, as it will not, if due regard be paid to it, eaſily admit the mixing of our own wild reveries, and vague imaginations with it; and will not ſo much employ our reaſoning, as our diligence.

Scripture facts, as recorded or foretold, being the baſis which we have to work upon; theſe muſt be taken as they are, and cannot be repreſented otherwiſe than they appear to be, without endangering the foundation, and falſifying the truth, of ſacred hiſtory. The hiſtorical events which we have to do with, are of all others the moſt ſacred and inviolable: There is here, therefore, no room left for the exerciſe of the inventive faculty; for the indulgence of the imagination; or for the diſplay of eloquence; in whatever degree theſe powers might be poſſeſſed, any farther than in illuſtrating the ſubject.

In accounting indeed for the *manner* in which things are brought about, recourſe muſt be had to obſervation and reaſoning. To confirm the truth and reality of them, other corroborating facts and circumſtances reſulting from, or analogous to thoſe principal ones, will ſurely be allowed as proper to be brought into view; and that nature may be admitted to comment upon herſelf.

In the collecting of theſe facts nothing will be requiſite but care and induſtry, accompanied with ſome degree of judgment in the choice and diſpoſal of them; in arranging, methodizing, and in drawing proper concluſions from them. Where the evidence of facts is wanting, probable conjecture, I hope, may be allowed to ſupply its place; and throughout the whole, the fidelity of hiſtory will be obſerved, as being no leſs neceſſary in the interpretation of Scripture hiſtory, above all other kinds of it, than it is in hiſtory itſelf*.

The

* On doit ſe ſouvenir, qu'un hiſtorien eſt fait pour decrire, et non pour inventer; qu'il ne doit ſe permettre aucun

The Scripture accounts of ſome phenomena may not always perhaps ſeem reconcilable to our notions of the laws of nature. But this may proceed from our ignorance, or our prejudice; or at leaſt from a condeſcenſion to, and a compliance with, the weakneſs and poverty of our underſtandings, and with the notions which we receive from our ſenſes; which often renders it proper, if not neceſſary, that matters ſhould be expreſſed according to the ſyſtem of appearances; as is the general practice at preſent, though we live in a philoſophical age; the popular language being always the beſt underſtood; and therefore the moſt proper concerning ſubjects incidentally mentioned, and not profeſſedly treated of; where there is no neceſſity of combating received notions, which are merely ſpecu-

aucun ſuppoſition, et qu'il ne peut faire uſage de ſon imagination, que pour combiner les obſervations, generaliſer les faits, et en former un enſemble, qui preſent à l'eſprit un ordre methodique d'idées claires, et de rapports ſuives et vrai-ſemblables. M. de Buffon, Hiſt. Nat. tom. I. p. 24.

lative, and attended with no ill conſequence, moral or natural. But theſe caſes ſeldom happen; and where they do, are eaſily diſcerned.

It is natural to ſuppoſe, that for the moſt part, if not always, regard is had to the nature of things, in the deſcription and accounts which are given of them in Scripture: And if this can be made out to a tolerable degree of preciſion and certainty, with regard to the greater part, this ſhould incline us to have the ſame favourable opinion of other paſſages, which cannot be ſo well accounted for; and to ſuppoſe that they likewiſe may have reſpect to the laws of nature, though not ſo according to our apprehenſions: At leaſt that where they manifeſtly depart from them, it is not without ſome reaſon that they do ſo.

What the Scripture delivers concerning the ſyſtem of the world, it delivers with authority, as it doth every thing elſe: An authority the higheſt of all others, and ſuperior to the weightieſt arguments that can be framed by human reaſon. The autho-

rity

rity of *Moſes*, ſetting aſide the conſideration of his being an inſpired writer, is, for his antiquity alone, ſuperior to that of all other hiſtorians. Hence all writers on this ſubject are deſirous of retaining him; and never fail to appeal to him when he ſeems to give countenance to them, or can be preſſed into the ſervice of their ſyſtem: But when that could not be done, there have not been wanting ſyſtem-writers ſo tenacious of their own pre-conceived opinions, as to ſet them up in oppoſition to his authority; and, rather than ſubmit to it, have had the hardineſs to maintain, that *Moſes* did not write, as he thought, in his hiſtory of the creation, and paid more regard to the notions of the vulgar, than the truth of things*.

When we contradict authority ſo reſpectable, we reject our ſureſt guide: No wonder then that we wander into a labyrinth of errors. In all our diſquiſitions, with regard to which Scripture affords any light, we

* Burnet, Archæolog. Phil. lib. II. cap. 7, 8, 9.

ſhould rejoice in it, and think ourſelves happy in the diſcovery of it. We ſhould never forſake it, but ſhould conſtantly follow it wherever it lead us: And it ſhould be our invariable rule, to accommodate our notions to ſcripture; and not to accommodate ſcripture to our notions: Much leſs ſhould we ever aim at ſoaring higher than it carries us, or at being *wiſe above what is written.*

As the greateſt geniuſes have been led aſtray by their own imaginations; and, by relying on their own powers, have miſcarried in reſearches, which ſeem too arduous for mere humanabilities:—As it argues the raſheſt preſumption to ſet about ſuch deep enquiries, without all the helps and lights that are to be found:—And as the greateſt light, and the help which can beſt be depended upon, is that which is held forth to us in holy Scripture:—It may well reward our labour, as it is an incitement to our induſtry, to collect, and bring together into one view, the ſeveral paſſages which occur in it, relating to the original frame and conſtitution

ſtitution of the world; to the various changes and revolutions, which it hath hitherto undergone; as well as thoſe which, the ſame Scripture foretells, it is to undergo hereafter; and likewiſe to gather what hints may be occaſionally interſperſed in it, that may contribute to illuſtrate this ſubject. And then conſtantly following this clue, without ever quitting, or loſing ſight of it; when the whole, and every part, is digeſted, and weighed, and compared together; to ſee what kind of ſyſtem can be raiſed upon it, and it alone, independently of every thing foreign to it; and excluſively of whatever cannot be fairly brought to agree and harmonize with it: Whereby it is hoped every thing will appear to be done *in number, weight, and meaſure*:—That the earth, as well as the *heavens*, will *declare* the glory of God:—That the whole creation will manifeſt itſelf to be the work of his hands; and to be likewiſe, both controuled and ſuſtained by his power.

The two fore-mentioned Theories having brought this ſubject much into contemplation;

templation; and neither these, nor any others, having obtained much approbation; it is more to be wondered at, that a Scripture Theory had not been thought of sooner; than that it should be attempted now; especially, as every other hypothesis, that is not founded on Scripture, or at least, that is not agreeable to it, being *weighed in the balance*, must be *found wanting*.

Having premised these few observations, I shall now enter upon the design of investigating from Scripture, the true *Theory of the Earth*: Supplying as little as possible from reason, or hypothesis; but what may be fairly grounded upon, or by just consequence deduced from, Scripture; or, at least, where Scripture is silent, and affords no light; what will be necessary to fill up its place, shall be no more, than what, I trust, will appear to be perfectly consistent with it. And if this *Scripture Theory of the Earth* shall be so happily investigated as to attain to that truth which it aims at, it will then assume to be no more than a plain natural history of it; but that in its

its design, the largeſt and moſt comprehenſive; as well as the moſt genuine and authentic, of all others.

And may that wiſdom which was with thee, O God, and was preſent when thou madeſt the world; when thou didſt ſet a compaſs upon the face of the depth, and appointedſt the foundation of the earth†— May that wiſdom, which ſitteth by thy throne‡, deſcend from above, enlighten my dark underſtanding, and enable me, in ſome meaſure, to diſcover and apprehend the mighty plan of thy works! May that Spirit, which dictated to thy ſervant Moſes the hiſtory of the creation; which revealed to the patriarch Noah the diſſolution of the earth by water; to thy apoſtle Peter its deſtruction by fire; and to thy beloved diſciple, the renovation of it — May he vouchſafe to me likewiſe, even to me thy ſervant, a feeble perſon, of a ſhort time, and more limited capacity; one ray of his divine light, to*

* Wiſdom, ix. 9.
† Proverbs, viii. 27. 29.
‡ Wiſdom, ix. 4.

guide

guide me in tracing, though obſcurely, yet juſtly, the outlines of this great and ſtupendous work; together with its various changes and revolutions! For thy counſel who hath known, except thou give wiſdom, and ſend thy holy ſpirit from above *?

* Wiſdom, ix. 17.

CHAP.

CHAP. I.

Of the Creation of the Earth.

THE Bible opens with the hiſtory of the whole material creation. It gives us a general view of the origin of the world, and of the formation of its ſeveral conſtituent parts, according to the order in which they were brought into being.

In the beginning God created the heaven, and the earth; or, rather, *the heavens*, as the original word is elſewhere more juſtly tranſlated.—*The heavens, and all the hoſt of them**.—All the heavenly bodies, ſun, moon, and ſtars—all this ſyſtem at leaſt.

This plain declaration, which is repeatedly confirmed in Scripture, at once overthrows the two great atheiſtical hypo-

* Gen. ii. 1.

theſes

theſes—That the world is from eternity—and, That it was the reſult of chance. It likewiſe clearly defeats a third atheiſtical notion, That there is nothing but matter in the univerſe; as the Creator is here plainly diſtinguiſhed from his creation; and as it will not be maintained, that matter can create itſelf: Much leſs, on the other hand, will that whimſical notion, which hath been ſtarted by ſome late philoſophers, concerning the non-entity of matter; which is founded in ſcepticiſm, and, terminates in atheiſm, be able to ſtand before it. Laſtly, the belief, that the whole univerſe was created by God, will by no means admit of another independent principle. So that all the atheiſtical and impious opinions, that ever were ſtarted in this reſpect, vaniſh before this ſingle poſition, *that in the beginning* of time *God created the heaven, and the earth.*

He firſt created only the matter of them, which, in order of time and nature, required to be created firſt; this being the

ſubſtratum

ſubſtratum of all the variety of forms, animate and inanimate, which were afterwards ſuper-induced upon it.

To ſuppoſe any pre-exiſtent, uncreated matter, is ſuppoſing two principles. It ſuppoſes what we have no manner of grounds to ſuppoſe in nature or reaſon; and what I apprehend contradicts the text itſelf. For after the account of the creation of the world in general, we are next informed in what condition the earth, which is the more immediate ſubject of this hiſtory, then ſubſiſted. *It was without form and void.* This muſt be underſtood of it after it was created, becauſe before it was created, nothing could be predicated of it. After it became earth, *it was without form and void.* It was no more than bare naked matter, uninformed, and unfurniſhed with any poſitive qualities, but ſuch as were eſſential to it merely as matter, and neceſſarily included in the idea of it. It was likewiſe *void* of life and beauty, quite dead and inert, an undigeſted confuſed heap or chaos.

And darkneſs, another negative quality, *was upon the face of the deep.* That muſt neceſſarily have been the caſe of this hideous abyſs, becauſe light was not then created. It was in a *horror of darkneſs.*

This might well be called *the deep*; becauſe if the ſeveral conſtituent particles of the chaotic maſs, ſolid and fluid, be allowed to have ſubſided according to their ſpecific gravities; the ſolid ones being the heavieſt would ſink, and the liquid, being the higheſt, muſt needs occupy the uppermoſt place, and form the ſurface of the whole. And though the liquid parts bore but a very ſmall proportion to the ſolid ones in general, taking into conſideration the whole bulk of the earth*; yet ſuppoſing the ſolids to lie pretty even, the fluids, when collected all together upon the ſurface, would form ſo conſiderable a body in itſelf, that its depth would be very great, as the term *deep* implies; admitting only the ſame quantity of water as there is at preſent,

* Dr. *Keil* calculates that the fluids do not at preſent make above the hundred thouſandth part of the whole globe.

though

though it will appear hereafter that the ſolids and fluids bore a much nearer proportion to each other then than they do at this time. Thus was the whole earth hitherto but one great and horrid abyſs, and this abyſs in a ſtate of ſtagnation: When *The ſpirit of God moved upon the face of the waters*—

The ſurface of the chaotic fluid was of courſe the thinneſt part of it; and therefore properly called *water*: And the divine Agent now began to put it in motion, in order to diſpoſe it the more readily and effectually for its future tranſmutations; which will be found to proceed in a very regular and natural order.

The whole maſs conſiſted of four elements, when ſeparated, which were now all blended together.—Earth, water, air, fire. To fit, and diſpoſe them for their ſeveral uſes, it was neceſſary to ſeparate, and aſſign them their proper ſpheres reſpectively. The Spirit of God therefore, in the firſt place, agitates this confuſed maſs in quality of a

ſtrong wind *, and by this means diſunites its ſeveral conſtituent parts, and diſpatches each to the region proper for it to occupy.

The element that was firſt called forth from the reſt is, the moſt ſubtle and volatile of the whole; that is, fire, or light, which is an emanation from it; or rather is fire itſelf, refined and ſublimated to the height of its capacity.

And God ſaid, Let there be light; and there was light.

This is the authoritative language of creative power. Let there *be* light; therefore it was not in *being*, before it was now called forth into exiſtence; and if light be a body †, as it is now, I think, generally agreed to be, here is a deciſive proof of the creation of matter, to one who ſubmits to the authority of revelation.

* רוח אלהים includes both theſe ſenſes, and may be tranſlated either by *the ſpirit of God*, or *a ſtrong wind*. I have endeavoured to preſerve both.

† The materiality of light was proved by Mr. *Boyle*, and *Boerhaave*.

As light was created the first day; and the formation of the sun was the work of the fourth day:—As they are likewise distinctly mentioned elsewhere, and the light first in order.—*Thou hast prepared the light, and the sun* *—We have hence grounds to conclude, there was light before there was any sun. For though the sun be the fountain of light to this system, it is not universally such: And light might have been diffused throughout the universe, before it was collected into distinct bodies.

And God saw the light that it was good—

Light is of so glorious a nature, that it is represented to us as being of the essence of the Deity. *God is light, and in him is no darkness at all* †. It is the most visible object in itself, and the great medium of the visibility of other things. It is therefore so beneficial, that there is a singular propriety in the observation, that *God saw the light*, and saw *that it was good. And God divided the light from the darkness.*

* Ps. lxxiv. 16.

† 1 Jo. i. 5.

It may be inconceivable to us, how this diviſion could be made, before the exiſtence of the ſun; whoſe office it now is, to divide the day from the night, and the light from the darkneſs *. But it may help our conceptions, to reflect that there is a natural diſtinction and diviſion between them; not only on account of their contrariety to each other; but becauſe there likewiſe is in light itſelf a property that contributes to this end; which is, that its motion is always in right lines; from whence, according to all experiments, the ſeparation between light and darkneſs is juſtly deduced; and ſo likewiſe are the ſhadows in perſpective: Whereas, if the light did not move in ſtrait lines, but in all kinds of curves; there would be no darkneſs or ſhadow, where the light could not have acceſs; and conſequently no ſeparation between light and darkneſs †.

* Geneſis, i. 14, 18.

† See Nieuentyt's Relig. Phil. vol. iii. Contemp. xxiv. Sect. 23.

Therefore

Therefore the endowing of light with this property; and its being impoſed upon it, as a law at its firſt creation, might alone be ſufficient, in the hands of the great Creator, to cauſe a ſeparation between it, and darkneſs.

This diſtinction between light and darkneſs was ſeen by the wiſe ſon of *Sirach*, who happily and accurately illuſtrates it by a very beautiful image. *He*, the Lord, *hath ſeparated his light from the darkneſs, with an adamant* *, that, as it were, cuts them aſunder from each other.

We may add, that a ſeparation between light and darkneſs, would reſult from the ſeparate places, which they would occupy. For while darkneſs lay on the face of the water; light, or fire, would naturally aſcend to higher regions.

And God called the light day; and the darkneſs he called night: And the evening and the morning were the firſt day.

Light and darkneſs being thus divided, and having their bounds ſettled, were appointed,

* Ecclus xvi. 16.

among other purpoſes, to make the firſt diviſion of time into day and night, alternately to ſucceed each other. And in this viciſſitude, the evening, which is but another name for night, takes the lead, and is firſt mentioned; becauſe darkneſs, which cauſes night, was firſt in order of time, and lay upon the face of the deep, during the former part of the firſt day; when light was created, and made the latter part of it. Accordingly the *Hebrews*, and many other antient nations, held that darkneſs was before light; and computed time, not by the days, but by the nights *.

The ſecond element that was formed, and was next extricated from the chaotic maſs, when put into motion, was *air*; which though ſo thin and ſubtile a body, yet hath a ſurprizing elaſticity, and *firmneſs* of texture, which enables it to ſuſtain vaſt loads of watery exhalations, which are raiſed up into it: Whence it is here called the *firmament*, dividing the waters under it,

* Vide Grot. de veritate Relig. Chriſt. lib. 1. ſect. 16.

from

from thoſe above it: And being, as it were, ſtretched between them, the original word is by ſome tranſlated *expanſe*; being capable of both meanings.

The next proceſs was to ſeparate the two remaining elements from each other; the *earth* from the *water*.

Let the waters under the heaven be gathered together unto one place, and let the dry land appear.

The manner in which this effect likewiſe might be brought to paſs, by virtue of the divine energy, doth not ſeem difficult to conceive, and account for. As the two former elements were extracted out of the common maſs, by its being put into a proper motion for that purpoſe; ſo theſe two ſeem to have been ſeverally formed, and to have had their diſtinct natures given them, by the ſame means. The motion requiſite for this purpoſe, I apprehend to have been that, of the earth's circumvolution on its axis. I ſuppoſe it will not be diſputed, but that this motion was given it at the creation. It will appear neceſſary it ſhould

have

have been then given it, on this very account. The word, in the original, by which the divine Spirit's moving the waters is expreſſed, is capable of being underſtood of this kind of motion, as well as of any other: And there is a *Syriac* word, derived from it, that doth ſignify ſuch a particular motion *.

Nor is this the only intimation that we have in Scripture of this motion. It is elſewhere ſaid, that God *ſet a compaſs*, Marg. *a circle on the face of the depth* †: Which he may be underſtood to have done, not only by giving it a circular form, it having been without any form before; but in order to that, by giving it a circular motion like-

* The Hebrew word is מרחפת, which I take to be a word of general acceptation, as ſignifying any kind of motion: And to convince us how applicable this word is to the kind of motion here ſpecified; the Syriac *maraohephi*, derived from it, ſignifies the circular motions made in water, by the caſting in of a ſtone.

Circuli in aquâ per jactum lapidis. Caſtelli Lexicon in verb. רחף.

† Proverbs, viii. 27.

wiſe, which was productive of this form. And where we read, *He hath compaſſed the waters with bounds* *; the literal tranſlation of the words is, *He impreſſed a circle*, or circular motion, *on the face of the waters.*

Now when this rotary motion was impreſſed upon the earth, the ſolid particles, being ſpecifically heavier than the fluid ones, having ſubſided, or ſunk down towards the centre of gravity, by virtue of what is called the centripetal force; the earth's rotation on its axis produced another force, called the centrifugal; by the action of which, in oppoſition to the former, the terrene particles were diſlodged from about the centre, and moved upwards towards the ſurface of the globe. The force with which the ſeveral particles would recede from the centre, would be in proportion to their weight, and the velocity of their motion; and the direction of the whole would

* Job, xlvi. 10. The original word for circle in both places is חוג. And the primary ſignification of the verb חוג is, *circulum fecit, gyravit.* Schindl.

be

be in ſtrait lines, and at right angles with the earth's axis. As the greateſt diſtance from the axis is in the middle of the globe, or under the equator; where the largeſt circle would be formed by the centrifugal force, and where it would be greateſt; the heavieſt bodies would fly thither, and in proportion to their weight and ſolidity, would there remain; being arreſted and counter-balanced by the centripetal force; whereby the lighter, and more fluid parts, would be forced to give way, and recede from the equator; to that degree, that if the earth could be ſuppoſed, upon this circular motion being given it, to fall immediately into the form of a perfect ſpheroid; I apprehend the caſe would be, that all the ſolid parts would ſo croud about the equator, and to as great a diſtance from it as their bulk would require ſpace to occupy, that there would be no room left in thoſe parts for any of the lighter fluid particles: For the terrene particles would maintain their ground, not only by their weight and ſolidity; but there is another principle, which

which would operate to the ſame end: For as all matter gravitates towards all matter; ſo all homogeneous parts of matter gravitate ſtill more powerfully towards each other, whereby they are more cloſely united, and compacted together, according to their ſpecific textures. Each therefore would aſſort themſelves, and aſſemble with their kinds reſpectively. The terrene particles therefore, ſuppoſing the earth to have aſſumed the form of a perfect ſpheroid, would unite into one compact body, and would not admit of any mixture of water with it; which being of a looſer texture, would be quite detached from it into ſome other region.

But I own it doth not ſeem probable, that the original ſhapeleſs maſs of the earth ſhould, all at once, or in a few revolutions on its axis, be brought into ſuch exactneſs of form. It would perhaps require many years, if not ages, for that purpoſe. It is not an exact ſpheroid now, for which indeed other reaſons may be aſſigned. There were therefore in the primitive earth probably many

many inequalities of ſurface—many eminencies and hollows; though perhaps not nearly ſo great as there are at preſent. The compages of the ſolid parts had not then grown ſo hard and concreted, as from length of time and other cauſes, rocks and minerals, and other terrene ſubſtances, are ſince become. They were originally of a ſofter mold; of a looſer, and more yielding conſiſtence; and therefore probably would not bear to be thrown up into ſuch rugged and enormous heaps, as we ſee lie upon the earth at preſent: But they roſe and fell into more eaſy and gradual heights and declivities. The greater cavities and hollows the waters would firſt fill up; and the overplus, which would probably be the much more conſiderable part, would fall off to occupy the remaining ſpaces, on each ſide, between the ſolid parts, and the poles.

But if it ſhould be thought that the rotation of the earth, would not of itſelf be productive of this effect; or even admitting that it would have no efficacy for this purpoſe;

purpoſe; yet would the very form of the earth alone, were there no other cauſe contributing to it, neceſſarily draw much water towards the poles: For, as the earth is caſt into the form of an oblate ſpheroid; which is higher, and more protuberant under the equator; and lower, and more flattened at the poles: The watery particles, by this means, would be drained off, and have a deſcending plane to run along; whereby the bulk of them would be collected, and lodged in the polar regions; where at preſent we ſhall leave them.

The earth, thus formed, was naked, ſteril, and unadorned: Therefore God proceeded to endow and enrich it, cloathing, and furniſhing it with graſs, herbs, plants, and fruit-trees; in order to fit it for the ſupport, uſe, and comfort of its future inhabitants.

For the better ſubſervience of theſe ends, it was neceſſary that the new world ſhould be ſupplied with proper degrees of light and heat. The light created on the firſt day was probably but faint and glimmering,

and

and attended with very little heat. But as the other elements were collected into bodies, by the motion into which they were put: So the element of fire having been put into motion likewiſe, naturally aſcended from the earth; and having mixed with the other elementary fire, diſperſed throughout the univerſe; by the fourth day, the whole was conglomerated into diſtinct bodies *. Beſides thoſe luminaries which emitted light from their own ſubſtances, others were created which reflected it: Of theſe kinds of lights, there were principally two, with which this earth was more immediately concerned; and by which it was illuminated, in a ſtronger, and more plentiful manner. Therefore we are next informed, that

God made two great lights, and ſet them in the firmament of heaven, to give light upon the

* This agrees with the notion of the antient Greek philoſophers; who called the ſun, δοχημα και οχημα του πυρος, the receptacle and vehicle of fire; and πυρος αθροισμα μιγα, a great collection of fire.

V. Grot. de verit. lib. i. ſect. 16.

earth,

earth; *to divide and rule the day and the night*; and to mark and diverſify the ſeaſons.

St. *Chryſoſtom's* reflection on this day's work is, "That the holy Scripture gives us an account, that the ſun, moon, and ſtars were not formed till the fourth day, to convince weak mortals, too prone to make them objects of their worſhip, as many have done; that theſe great luminaries, as uſeful as they are; yet were not ſo abſolutely neceſſary to the habitable world, but that God could cauſe the being, and provide for the well-being of it, without them *." For the earth brought forth graſs on the third day; the herb yielded ſeed after its kind; and the tree yielded fruit, whoſe ſeed was in itſelf; and not owing to the virtue, or influence of the ſun, or to the inſtrumentality of any ſecond cauſe whatſoever; and even perfected its fruit likewiſe, by virtue of the divine command alone. If we ſhould not rather ſay, that every fruit-tree, and grain-

* Chryſoſtom, Hom. vi. in Gen.

bearing plant, were created with their fruit in perfection upon them. For *every plant of the field* was created *before it was in the earth*; *and every herb of the field before it grew* *; without the nouriſhment of the earth, the culture of man, or the benignity of the heavens, or ſeaſons; however neceſſary theſe helps have ever ſince been to the production, and growth, and maturation of them.

In like manner, though the two great lights were made to divide the day and the night, and were placed in the firmament of heaven, to give light unto the earth, and to divide the light from the darkneſs; yet there had been light before; and the light had been divided from the darkneſs; and there had been days and nights, before ſun or moon were created †: For which ſome account was attempted to be given. The primeval world, then, reſembled the new *Jeruſalem* in this reſpect,

* Gen. ii. 5.

† Chryſoſt. ib.

having

having no need of the ſun, neither of the moon to ſhine in it *.

This notwithſtanding was an improvement adorably great and admirable, as every day's work was an improvement upon the foregoing; the ſun warming and cheriſhing the earth with his beams; maturing its fruits; bringing on, and varying the ſeaſons †; dividing, and marking out the times; and rendring the world habitable, commodious, and comfortable for the whole animal creation, with which it was about to be ſtocked.

This was the work of the two remaining days: The earth being prepared, and previouſly furniſhed with food for them, the Creator then proceeded to provide it with inhabitants of various kinds; for whoſe ſubſiſtence its different parts were wiſely contrived, and adapted: The ſea for fiſhes; the land for cattle; and

* Revelation, xxi. 23.

† A diſtinction in this reſpect will be made hereafter.

the air for birds; providing likewiſe for their continuation and increaſe.

The antients compared the world to an egg: And the operation of the ſpirit upon it, they conceived to be a kind of incubation; which, by its genial warmth gradually diffuſed through it, raiſed a gentle fermentation in it, which matured its ſeveral productions; But this is no more than a kind of illuſtration. The philoſophy of this part of nature, is what we cannot pretend to have any knowledge of, ſo as to be able to trace out the laws relating to the production of animal life, and ſpirit; which are quite out of our cognizance.

One animal there was of a nobler kind, furniſhed with higher endowments, than all the reſt, and favoured with a peculiar prerogative. His formation is reſerved for laſt, to crown the whole: He is deſcribed as being made in the image and likeneſs of God himſelf, and is inveſted with the property and dominion of the whole creation.

Thus the heavens, and the earth were finiſhed, and all the hoſt of them. And God ſaw every thing that he had made, and behold it was very good* †.

I ſhall finiſh this chapter with ſome reflections, which M. *Monteſquieu* makes at the entrance of his celebrated work on the *ſpirit of laws*; which are no leſs applicable to the ſucceeding parts of this treatiſe. "The world, though formed by the motion of matter, and void of underſtanding, ſubſiſts nevertheleſs through ſo long a ſucceſſion of ages: Its motions therefore muſt certainly be directed by invariable laws. And could we imagine another world; it muſt alſo have conſtant rules, or muſt inevitably periſh.—Thus the creation, which ſeems an arbitrary act, ſup-

* Gen. ii. 1. This chapter ſeems to have been tranſpoſed. The three firſt verſes are the concluſion of the hiſtory contained in the firſt chapter. Then follows (ver. 4.) what looks like an extract, which *Moſes*, as far as ſuited his purpoſe, had preſerved out of ſome former account; but which is greatly perplexed.

† Geneſis, i. 31.

poſeth laws as invariable, as thoſe of the fatality of the atheiſts. It would be abſurd to ſay, that the Creator might govern the world without thoſe rules; ſince without them it could not ſubſiſt.

Theſe rules are a fixt and invariable relation. In bodies moved, the motion is received, increaſed, diminiſhed, loſt, according to the relations of the quantity of matter and velocity."

We may add, That the laws, by which the world is governed, muſt have been framed at the firſt formation of it: And if it is governed by laws, it probably was made according to certain laws likewiſe; and that the ſame laws, which were obſerved in its creation, were continued, except with regard to a change of circumſtances, in the government of it likewiſe.

CHAP.

CHAP. II.

Of the Primeval, and Paradisiacal State of the Earth.

THE great Architect of the universe having, upon a review of his work, expressed his complacency in it; and having seen with approbation, how the whole was fitted for its designed end; and all the parts adapted to the several uses they were made for; as nothing could come out of the hands of the all-wise Creator, that would not fully answer his purpose in creating it; this earth must have been admirably well contrived, and very completely furnished, for the reception and sustenance of its future inhabitants.

God made man upright, in perfect innocence and ſimplicity; without the leaſt blemiſh or imperfection, natural or moral. It is probable therefore, as Mr. *Whiſton* obſerves, "That before any good, or bad actions of creatures; when every thing was juſt as the wiſdom of God was pleaſed to appoint—When each creature was complete and perfect in its kind; and ſo ſuited to the moſt complete and perfect ſtate of external nature—It is highly probable, that the outward world, or every ſuch ſtate of external nature, was even, uniform, and regular; as was the temper and diſpoſition of each creature, that was to be placed therein; and as properly ſuited to all their neceſſities, and conveniences, as was poſſible, and reaſonable to be expected. Such a ſtate, it is natural to believe, obtained through the univerſe, till ſucceeding changes in the living and rational, required proportionable ones in the inanimate and corporeal world *."

* Mr. Whiſton's Theory of the Earth, p. 115.

The

The primeval ſtate was but of ſhort continuance, even at the longeſt duration, which it hath been computed at*. No wonder therefore, that the account which we have of it, is ſhort and obſcure likewiſe. The ſacred hiſtorian is indeed far from being diffuſe in any of his deſcriptions. We are to make the moſt we can of the hints, which he hath given us.

In his hiſtory of the vegetable creation, the order and manner in which it ſeems to have been carried on, was, That God, in the firſt place, exerciſed his creative power, in making and forming all plants, and herbs, in their ſeveral kinds, by themſelves, in a diſtinct and ſeparate ſtate from the earth— And that at the ſame time, he prepared the earth for their reception, when created, impregnating it with virtue for their nouriſhment and growth; after which he planted them in it. This, I think, may be

* See Eſſay on Redemption, p. 15. where it is computed to have laſted about ſix months.

con-

concluded from the words, God made *every plant of the field*, before *it was in the earth, and every herb of the field*, before *it grew — And the Lord God planted a garden eaſt-ward in Eden**. This I take to be explanatory of what went before, by ſpecifying the ſpot where, and the manner in which, he provided for the preſervation and growth of the trees and vegetables, which he had made. He planted them in a garden; the choice of them at leaſt; and there he cauſed them to grow.

2. The neceſſity of this procedure appears from the reaſons aſſigned for it. *For the Lord God had not cauſed it to rain upon the earth; and there was not a man to till the ground.* The natural and ordinary means for raiſing and cultivating the fruits of the earth, had not as yet been provided: Whence, by the way, we may learn, not to aſcribe too much to ſecond cauſes, as God can work without them; or ſupply the abſence of them another way. Thus,

* Geneſis, ii. 5. 8.

inſtead

inſtead of rain, *there went up a miſt from the earth, and watered the whole face of the ground.*

3. We may infer, That the vegetable ſyſtem was brought into exiſtence in a very vigorous ſtate; and being planted in what may, with the greateſt propriety, be called *a virgin earth*, it muſt have been endowed with plenty of rich juices, to feed and maintain the charge committed to it; ſince it required no rain, nor any culture of man, to aſſiſt in promoting the nurture, or growth of any of the ſeveral ſpecies of its vegetables. This is confirmed by the deſcription of paradiſe. The trees, with which it abounded in great variety, were pleaſant to the ſight, and their fruits very good for food: And one particular tree there was in it, the fruit of which was ſo excellent, as to confer immortality: Nay, the forbidden fruit ſeems to have been excellent in its kind likewiſe; and the eating of it might have been attended with many benefits, had it not

been under a peremptory inhibition; the act of tranſgreſſing of which was probably productive of an alteration in its nature, and made the eating of it ſo detrimental, and fatal in its conſequences.

Adam having had an expreſs grant of all the other trees of the garden, the fruits of which were delicious and nouriſhing; there doth not ſeem to have been any need of his having recourſe to any other kind of food: And as he had nothing to do for the ſupport of life, but to take, and eat; he muſt have been exempt from all hard labour; as he might thus, ſtrictly ſpeaking, live from hand to mouth, on the proviſions which every where preſented themſelves to him, readily prepared for his uſe. His only charge was, *to dreſs and keep* the garden he was placed in. The *dreſſing* of it, required little more than the pruning of its luxuriances; of which it might be ſaid, *Labor ipſe voluptas.* And his *keeping* of it conſiſted, in guarding watchfully againſt the intruſion

intruſion of any of the beaſts of the field, or of any other creature, that might annoy him, and prove an enemy to his felicity: For which purpoſe therefore he muſt have had it ſufficiently fenced, and in need of nothing, but his own diligence in watching it.

From the cuſtody of the garden having been committed to *Adam's* charge may be inferred, that he had it in his power to have kept the ſerpent from entering the garden; and therefore, that he was guilty of a breach of truſt in ſuffering him to enter. For he never would have had a truſt committed to him, which he had not the power of executing. All therefore that followed was the conſequence of his own negligence.

The fertility of the earth in its primitive ſtate, and the goodneſs of its nature, may be deduced from the very curſe on the ground. If, upon this account, *Adam* was to eat of it in ſorrow all the days of his life, he would otherwiſe have had a long

a long and delightful enjoyment of it: From the earth's being now condemned to bring forth thorns and thiſtles, may be concluded; either that theſe, and other noxious weeds and plants, did not originally make part of the vegetable creation; or elſe, that they were not deſigned to grow and increaſe to any hurtful, or incommodious degree: If *Adam* was ſentenced to eat his bread in the ſweat of his face; he would, had he kept his firſt ſtate, been an entire ſtranger to hard labour and fatigue; and would have reaped the bleſſings of the earth, with eaſe, and gladneſs of heart: And inſtead of drawing a hard ſubſiſtence out of the ground, it would have afforded him a plentiful, and pleaſurable enjoyment of it.

4. Another inference may be drawn from the circumſtance of there being no rain in the primitive earth, _*The Lord God had not cauſed it to rain upon the earth.* He had not thought fit to cauſe rain, either by an immediate exertion of his power;

power; or by ordaining any ſecond cauſes for the production of this meteor. No ſecond cauſe, that I know of, contributes more to this end, than the elevation of mountains: If therefore there had been mountains at this time, as all ſecond cauſes operate naturally to their appointed ends, I do not ſee how the earth could have been without rain. Rain there might have been without any mountains to generate it, as we know it often rains in champaign countries from other cauſes: But that there ſhould be ſuch large ranges of high mountains, as we ſee in the preſent earth, and yet no rain at all, I confeſs is not credible to me: Nor do I ſee how the want of rain can otherwiſe be accounted for.

Eminences there were in the primeval earth; but none, it ſhould ſeem, that reached the region of the clouds; which otherwiſe impinging againſt them, muſt needs have come down in rain. For there were waters above the firmament; and had

had there been mountains, thoſe waters would in part have been arreſted, and condenſed by them; or being otherwiſe collected into clouds, and driven by the winds againſt the ſides of the mountains, would have deſcended in rain, in the ſame manner as we ſee they do at preſent. Even thoſe miſts and vapours, which the earth emitted ſo copiouſly, now that it was juſt riſen reeking wet out of the water — theſe, had they met with any ſteep and high mountains, would not fail of being condenſed and conſtipated by them, ſo as to be converted into rain likewiſe: But mountains are not neceſſary to the production of miſts; this being a meteor that ariſes as freely and copiouſly out of the flat and champaign countries, as any other.

On the other hand, we find the earth, at this time, was well ſupplied with rivers; as no leſs than four, which afterwards proved very large ones, met in one ſpot; though it is not very probable they were

were ſo ſoon become any thing conſiderable.

It may however be aſked, how there could have been rivers, without mountains? This I take to be very eaſy to conceive; becauſe that, when the earth was ſeparated from the waters, on the third day, the dry land might appear in gradual riſings, as before intimated, above the *ſeas*, with ſufficient inequalities and hollows in it for the running of rivers, without its being thrown up into mountains of ſuch ſtupendous heights, as we ſee at preſent in it. And as there was miſt and vapour, in ſuch abundance, as was ſufficient to ſerve inſtead of rain for watering the whole face of the ground; ſo the ſurplus of it might be ſufficient likewiſe to anſwer the uſe of rain in ſupplying water for filling the rivers; even upon ſuppoſition, that they are not ſupplied by any other means; this miſt being a proviſion with which the new earth was furniſhed to ſerve every uſe and purpoſe of rain whatſoever.

Whatever other objections I can conceive may be made to this notion, they ſhall be conſidered hereafter, in a diſtinct chapter, *On the Theory of Mountains*; when we come to the period in which I ſuppoſe they were formed.

I ſhall only obſerve farther here, that it doth not ſeem very probable, that the face of nature in its paradiſiacal ſtate, ſhould exhibit ſuch hideous ſpectacles, and be ſo deformed, as it appears at preſent: Nor in that ſtate, which, from what hath been obſerved, may be ſuppoſed its ſtate of greateſt fertility, doth it ſeem probable, it ſhould be encumbered with ſuch bleak and barren tracts of that large extent, as to occupy ſo conſiderable a part of the ſurface of the whole earth *.

* The antients had a tradition, that the primitive earth was more level, and in general nearer to a champaign, than it is at preſent. Thus, *Rabanus Maurus*, and *Bede*, as cited by Dr. *Burnet*, teſtify. Sciendum eſt, tunc in novitate rerum, ſi non omnia, plura tamen plana fuiſſe. Theor. lib. cap. 10.

Dr. *Burnet* ſuppoſes the mountains make a tenth part of the dry land.

The

The hills and mountains were undoubtedly raised to serve many useful and noble purposes in the creation: But these uses might not, in its first form and state, be wanted. The mountains would not be wanted in a temperate state of the air, to skreen and keep off the cold, and nipping blasts of the northern and eastern winds; which is one of the uses assigned for them at present in many countries. Another principal use is, that the long ridges and chains of lofty mountains, being observed generally to run east and west, in the three continents of *Europe*, *Asia*, and *Africa*, at present serve to stop the evagation of the vapours towards the poles; without which impediments, they would all run from the hot countries, and leave them without rain to refresh them; which they now enjoy in great plenty, at certain seasons of the year, from the mountains condensing the vapours, and turning them into rain; and by that means, giving origin to springs and rivers; whereby the regions of the torrid zone become habitable.

Now this is the very caſe before us: Neither thoſe, nor any other countries, had any rain in the primitive earth; the uſe of it, as we have ſeen, being ſupplied another way; and the warm exhalations of the now torrid zone, meeting with no mountains to obſtruct their paſſage towards the polar regions, were at liberty to diffuſe a genial heat to ſuch climates as moſt wanted it; and to communicate a due temperature of air and weather around the globe *.

This ſuggeſts another inference, which may be drawn from the earth's being, in its firſt ſtate, without rain. If there was no rain, there was of courſe no froſt, or ſnow; ſnow being no more than frozen or congealed rain: Nor probably were there any intenſe colds, nor boiſterous winds and tempeſts; for the generating of all which, the hills and mountains are adapted, and now contribute to.

* But this reaſoning is not applicable to the great continent of America, the mountains of which run north and ſouth. Providence hath provided for the ſalubrity of thoſe climates in another manner.

Nor,

Nor, on the other hand, were there probably any immoderate heats of weather, or ſcorching ſultry regions, nor any inclemency of ſeaſon, or climate; but a conſtant calmneſs, and perpetual ſerenity of weather, reigned throughout all parts of the earth.

This we may, upon good grounds, conclude was at leaſt the ſtate of paradiſe. The nakedneſs of the firſt pair was not only a token of their perfect innocence and ſimplicity; but was moreover a proof of the thorough mildneſs and warmth of the air; as they required no cloathing to defend them from it; which otherwiſe would undoubtedly have been originally provided for them; as was done afterwards, when there came to be a neceſſity for it.

It ſeems to be but what is conſonant to reaſon, and to our natural notions of the fitneſs of things; that innocent creatures, newly brought into exiſtence, by the ſelf-moving goodneſs of the great Creator, ſhould taſte of his benignity likewiſe, in providing

ſuitably for their ſupports, in the life he had conferred upon them; with deſign undoubtedly to make them happy in it — That to this end, they ſhould breath in a pure atmoſphere; the air ſerene; the ſeaſons temperate; and the fruits and juices of the earth, wholeſome for their nouriſhment.

This is no more than what is agreeable to our notions of the divine attributes. It is indeed no more than is ſuitable to the deſcription, which is given us of the paradiſiacal ſtate; and what ſeems neceſſary for the ſupport of creatures, calculated for a great longevity, if not for perpetuity, in the ſtate they were placed in, on condition they behaved well in it.

CHAP.

CHAP. III.

OR THE STATE OF THE EARTH AFTER THE FALL.

THE face of nature, inſtead of that chearful look which every thing appeared with, muſt have now worn a very diſmal aſpect; and have been much affected by this cataſtrophe; and the whole earth muſt have greatly ſuffered on account of it.

It may ſeem ſtrange, that when the Almighty had ſignified his approbation of all his works in terms of ſuch complacency, he ſhould ſo ſoon make any conſiderable alterations in it; and that, not for the better, but the worſe. It may appear no leſs ſtrange, that *Adam's* tranſgreſſion ſhould affect all the world about him. But the hiſtory

acquaints us with the cauſe of all this. The creature which God had made, in order to be at the head of his creation, where he placed him, and inveſted him with the dominion of the whole; abuſing the liberty with which he had been endowed, and breaking through the only reſtraint which had been laid upon it, required now to be treated in a different manner. The whole creation, animate and inanimate, was made ſubſervient to him: He was to have the chief enjoyment of it; and every thing conſpired to promote his happineſs. But he was not to be abſolute lord and monarch of this empire, but was made amenable to him who was the Lord paramount of all. God, when he made the world, eſtabliſhed laws for the government of it, natural and moral; natural laws for the government of the whole; and moral laws beſides, for the government of moral agents, ſuch as man: Or rather, the whole was but one law, which had a moral tendency, with regard to moral agents. Theſe ſeveral laws, or

parts

parts of this law, the great Lawgiver had connected together, ſo as to form one whole, and to cooperate with each other to the ſame ends, ſo as to be productive of the general good; and there was no infringing of any part of them, but an infringement of the whole muſt neceſſarily enſue. They could not be infringed, but by man. The inanimate creation invariably purſued, or rather was made to purſue, the laws of nature impoſed upon it: The brute creation conſiſted of neceſſary agents, who had it not in their power to diſobey the laws by which they were governed: Man was the only free agent, who could act according to the dictates and impulſe of his own will; and this freedom he was tempted to abuſe by diſobeying. This diſobedience required to be animadverted upon: And theſe laws required to be altered for this end.

The creation, which had been modeled for his enjoyment, was now converted to ſerve the purpoſe of diſcipline: And man having grown wanton in his plenty; the earth,

earth, which administered to it, was made to withhold that plenty from him; and not to yield her fruits, without hard labour to obtain them, in inferior kinds, and of worse qualities, than he had before experienced: And this was done, in order to mortify, and subdue those irregular appetites and passions, which he had too much indulged; to reduce him within the bounds of sobriety and moderation; and to keep him more strictly under the restraints of that government, which he had dared to rebel against.

Thus *wherewithal man sinned, by the same also was he punished* *. *His own wickedness corrected him, and his backslidings reproved him* †.

This punishment was inflicted upon him, not in vengeance, but in mercy; for his amendment, and the reparation of the wrongs he had done; and perhaps for his recovery, and the restoration of nature like-

* Wisdom, ix. 16.

† Jer. ii. 19.

wise

wiſe to the ſame happy ſtate, from which he had been the cauſe of perverting it.

Thus the ſame general plan was ſtill carried on; the ſame gracious purpoſe perſevered in; the good of the whole; as well in this ſeeming deviation from the original deſign of it, as in the deſign itſelf; agreeably to what is obſerved by an approved author, already cited, concerning God's government of the world, That "diverſity is uniformity, and change conſtancy *."

This is the beſt account I can give of the grounds and reaſons of the great change introduced into the ſtate of the earth at this time; as it will appear to be, when we have conſidered the whole of it.

This cataſtrophe is couched in terms of reat ſeverity —

Curſed be the ground for thy ſake.

To curſe, in general, is to devote unto evil: Whether applied to perſons, or things, it implies the worſt events, that can befall them. In the eccleſiaſtical

* Monteſquieu, ib.

ſenſe, it is expreſſed by anathematizing; which is, to caſt perſons out of the pale of the church, and deprive them of all the benefits of the chriſtian community.

When applied to inanimate things, it is, in the utmoſt rigour, to devote to deſtruction; in leſſer degrees, to deſecration from holy uſes, and to condemn ſuch things to the vileſt uſes of all others. Thus ſays the apoſtle: *The earth, which beareth thorns and briars is rejected; and is nigh unto curſing; whoſe end is to be burned* *: Alluding to the original ſentence, *Curſed be the ground for thy ſake.*— Its being thus devoted to malediction implies a deprivation of its fertility, and of the bleſſing of providence upon it, for that purpoſe; and in effect a condemnation of it to a ſtate of ſterility. This it could not ſuffer for any fault of its own; but it was for the fault and offence of its occupier, who was the real ſufferer in the end. Curſed ſhall it be *for thy ſake*—

In ſorrow ſhalt thou eat of it all the days of thy life—

* Hebrews, vi. 4.

A ſorrow

A ſorrow which would naturally ariſe from a reflection on the ſad change he found in his diet; being more unſavoury, and inferior in quality, to that which before he had been accuſtomed to; beſides that it ſubjected him to much weariſome toil in providing it.

Thorns and thiſtles ſhall it bring forth to thee—

Botaniſts make frequent diſcoveries of new plants. Whether there really be any ſuch late productions of immediate creation; as the conſtant preſervation of the world is a kind of repeated, or continued creation of it, in all its parts—Whether ſuch plants as are called new, have only hitherto eſcaped notice—Or, whether they have lain concealed in their ſeeds, ever ſince the vegetable world was firſt brought into being—I leave to be diſcuſſed by thoſe who are more converſant in the ſubject. Be that therefore as it may: This we may ſafely affirm; That thorns and thiſtles were ſtrange and ſcarce at leaſt, till this ſentence was paſſed; upon which the earth brought them forth ſpontaneouſly; and ſtill continues

nues to teem with theſe, and other noxious plants and weeds, in great abundance; and that without any diminution of its ſtrength: Whereas the earth muſt be dreſſed and cultivated, and aſſiſted with manure, and ſown with the grain, that is wanted for food, before it will yield it: And notwithſtanding all the art and induſtry of man, and in ſpight of all the improvements in huſbandry, which of late years eſpecially have been made, and carried to great heights; it ſoon becomes languid, and heartleſs, wears out, and is quite exhauſted of its fertility: When, on the other hand, if it be but a little neglected, it ſurprizingly recovers its vigour for the production of weeds; and, without any more ado, preſently returns, to act in ſubſervience to its original ſentence: Than which there needs no better proof of the reality of the curſe upon the ground *. And of the thiſtle

* See Nieuwentyt's Relig. Phil. vol. ii. p. 722. *Grotius* acquaints us, that one having aſked the reaſon, why thorns and weeds grew more plentifully than

thiſtle particularly it is obſerved, that its ſeeds, of which it yields great plenty, I forget how many I have read to have been counted out of one head of a thiſtle—theſe ſeeds are winged with a down, by which they are carried with the leaſt breath of air far and wide; and by this means they ſow themſelves all around. Thus, according to the Pſalmiſt's obſervation, did *God make a fruitful land barren, for the wickedneſs of them that dwelt therein* *.

That ſuch as are reckoned noxious weeds are made to anſwer many valuable purpoſes in the creation—That excellent

than corn, was anſwered, Becauſe the earth was the mother of weeds, but the ſtep-mother of corn; that is, the one ſhe produced of her own accord; the other, not till ſhe was ſolicited to it, by man's toil and induſtry. Annot. in Luc. viii. 7.

The fact is indiſputable; but it might have been accounted for in a better manner. The earth, which is the common parent of all vegetables, would not have been more partial in its production of the noxious than ſalutary ones, if it had not been perverted from its natural ſtate.

* Pſ. cvii. 34.

medicines

medicines are extracted out of poiſonous plants — And the rankeſt poiſons are rendered highly medicinal — This is but one inſtance in a thouſand of the goodneſs of the beneficent Creator, in bringing good out of evil; which ſeems to be an eſtabliſhed law, and a favourite maxim in the divine council.

And thou ſhalt eat the herb of the field—

A grant of the herbage had been made before*: What need was there for repeating it? It was granted at firſt, as a part of *Adam's* neceſſary ſuſtenance: How comes it now to be enforced upon him by the way of puniſhment! I cannot account for this any other way, than as follows — *Adam*, together with the herb bearing ſeed, had the fruit of the trees likewiſe aſſigned him for meat†: This latter grant was renewed, and confirmed to him, upon his being placed in paradiſe‡: For this was an advanced

* Gen. i. 29.
† Ibid.
‡ Ch. ii. 16.

ſtate

ſtate, to which he was removed, as an early proof of his Maker's favour towards him. And finding this nurture ſo agreeable; ſo ready, and in ſuch plenty; and likewiſe ſo much preferable to the herb bearing ſeed, for food; he made no uſe of this latter, but fed upon fruit alone. But when he was turned out of paradiſe, he miſſed his uſual proviſion: He found no fruit-trees planted for him in the place whither he was now removed: Or, ſuch as he met with being laid under a curſe, the fruit was become unpleaſant and inſipid, and afforded no wholeſome, nor ſufficient nouriſhment. It was therefore neceſſary to betake himſelf to the herb of the field, for food. This was of two ſorts: 1. עשב ירק *the green herb*; which at firſt had been appropriated for the food of cattle, fowls, and reptiles*; 2. עשב זרע זרע *the herb bearing ſeed*; that is, all grain-bearing, and leguminous plants; from both which kinds he was now conſtrained to gather and extract his neceſſary ſuſtenance.

* Geneſis, i. 30.

heavens, in bringing forth, and maturing its fruits. For it is reaſonable to ſuppoſe, that the curſes inflicted upon his poſterity for their diſobedience to God's laws, were likewiſe felt by *Adam* in their utmoſt ſeverity, for that offence of his, which opened the door, and led the way to all other ſins and tranſgreſſions: And *that the heavens over his head became braſs, and the earth iron — that the land did not yield him her increaſe, nor the trees of the land yield their fruit* *. Nay God expreſly aſſures *Cain*, purſuant to the curſe which had been denounced, *When thou tilleſt the ground, it ſhall not henceforth yield unto thee her ſtrength* †: Than which what could be more diſcouraging? And yet till he muſt, or periſh.

That the ſeaſons were quite irregular, during the whole antediluvian period, I think, may be fairly inferred from God's promiſe to *Noah*, after the flood; that he would remitt that part of the curſe, and grant more ſettled weather, and

* Lev. xxvi. 19, 20.

† Gen. iv. 12.

more

more favourable ſeaſons for the time to come. *I will not again curſe the ground for man's ſake. But while the earth remaineth, ſeed-time and harveſt, cold and heat, ſummer and winter, and day and night ſhall not ceaſe* *.—Shall not ceaſe, or fail to ſucceed each other in regular order; whence it ſhould ſeem there had been a failure in this reſpect before.

The ſeverity of the weather after the fall is plainly deducible from the care of the divine providence, in furniſhing *Adam* and *Eve* with proper cloathing to defend them from it. They had ſown fig-leaves together, and made themſelves aprons to cover their nakedneſs, as ſoon as they became ſenſible of it: And this was ſufficient for that purpoſe. But they found it to be but a partial and poor expedient to guard them againſt the inclemency of the air: They wanted ſome warmer and more comfortable cloathing for their whole bodies. Therefore to aſſiſt their helpleſs

* Gen. viii. 21, 22.

ignorance in this extremity, *The Lord God made them coats of ſkins and cloathed them* *: Which, as, on the one hand, it was a manifeſt indication, that he had not quite caſt off theſe poor wretches, nor totally withdrawn his protection from them; ſo, on the other, we cannot ſuppoſe he would have ſacrificed any of his innocent creatures, to warm theſe unhappy perſons with their fleeces, had they not felt the intenſeneſs of the cold to that degree, as to render it neceſſary to preſerve them from it in ſome ſuch manner.

Thus muſt the whole face of nature have worn a moſt melancholy aſpect to the penſive beholders, and have become ſadly changed, in compariſon with what they had ſo lately experienced it to have been.

Eden was become a deſart, and the land which was as the garden of God, was become a deſolate wilderneſs; dreary, cold, and comfortleſs to dwell in.

* Gen. iii. 21.

Nor

Nor was this the whole of this wretched caſe: It may be traced yet farther; and there are much deeper veſtiges of the effects, which the evil introduced by the fall of man had on the whole inanimate creation, as will appear preſently.

CHAP. IV.

THE THEORY OF THE MOUNTAINS.

AS the mountains cover ſo large a part of the terreſtrial globe, and make ſo conſpicuous a figure in it; they are entitled to a diſtinct and particular conſideration; wherein our ſubject will lead us to enquire into their cauſe and origin; and into the time, occaſion, and manner of their formation.

There have been three different hypotheſes concerning the origin of the mountains. 1. That they are coeval with the creation, which is the moſt general opinion. 2. That they were formed at the time of the deluge. 3. That they were raiſed

raiſed ſucceſſively, and gradually, by the force of winds and hurricanes, but chiefly by currents, and by the flux and reflux of the ſea. I ſhall beſtow a few obſervations upon each of theſe hypotheſes, before I lay down what I think was the true cauſe of their production.

With regard to the firſt opinion, it doth not ſeem probable, that the earth, in its firſt formation, had any high mountains in it. I have already offered one argument againſt that ſuppoſition *, from the circumſtance of there having been no rain in the primitive earth; whence it was inferred, that therefore there could have been no mountains to produce it. To this may be added, That, had the mountains been part of the original creation, it is probable they would have been laid out in a more regular manner; and that the ſeveral *ſtrata*, of which they conſiſt, would have lain horizontally above each other, *ſtratum ſuper ſtratum*, according to

* Chap. II. p. 46.

their

their ſpecific gravities: Whereas now, they appear in all manner of irregular ſhapes and directions, without any order, or regard to the laws of gravity; and even contrary to them: Not only different diſtricts containing different materials, one country being ſtony, another ſandy, a third gravelly, or claiy; ſome parts containing metals and minerals of ſome certain kinds, others of quite different kinds: But the ſame lump, or maſs of earth, having in it the corpuſcles of ſeveral metals and minerals, confuſedly intermixt one with another, and with its own earthy parts; All which appearances, with ſeveral others that might be obſerved, demonſtrate great irregularity and confuſion; and look more like the effects of a general wreck, or ruin; than of any regular, and uniform ſtructure. This argument hath been ſtrongly urged by Dr. *Burnett*, Mr. *Whiſton*, and others, againſt the ſuppoſition, that either the earth in general, or particularly the mountains, were

were originally thus formed. To account for their formation in this manner, Mr. *Ray*, and others, ſuppoſe they were raiſed by an earthquake, on the third day's work of the creation; when the dry land was ſeparated from the water. But it doth not ſeem probable, that, the element of fire having been detached from the other parts of the chaos, on the firſt day, there ſhould be ſo much of it left, as to kindle and ſpread to that degree, by the third day, as to cauſe ſuch an univerſal earthquake: Earthquakes, as Mr. *Ray* himſelf obſerves, in a treatiſe which he wrote on this ſubject, being a kind of ſubterraneous thunder; or an exploſion of nitro-ſulphureous vapours, kindled in the bowels of the earth; by which he juſtly ſuppoſes the mountains were thus forced up; though not at the time which he aſſigns for it.

Dr. *Keil* ſuppoſes, the mountains might have been formed at the creation, "without any reſpect had to gravity, or levity; that body coming ſooneſt to its reſt, which

which was neareſt to the centre; and where theſe bodies happened to be thickeſt, or higheſt, or their parts leſs coherent; there alſo, after their fall, would their ſurfaces be higheſt; and the face of the whole would be very rugged and mountainous—That holes, cavities, and caverns were made by the falling of theſe irregular pieces on one another; which were filled by the liquids; the overplus of which, ſpreading upon the vallies, would leave great protuberances of the ſolid maſs, as great as any of our mountains, ſtanding out above the ſurface of the water—That in the chaos, there might be a great many bodies, which being in a great meaſure hollow, or faſtened to ſome other matter of leſs gravity, than that of the fluid chaos, would ſwim on the ſurface of it, after the ſubſiding of all the reſt; and ſome parts of them, ſtanding above the ſurface of the watery orb, would form mountains *."

* Dr. *Keil's* exam. of the reflections on the theory of the earth, p. 195.

No

No one wrote more philoſophically, in the main, on this ſubject, than Dr. *Keil:* But in this reſpect he is certainly very unphiloſophical; and makes as great a chaos of the earth, as that in which he found it. His antagoniſt is not too ſevere upon him, when he treats this account, which he gives of the mountains, as precarious, chimerical, and ridiculous.

I ſhall reſt the proof of this point upon one ſingle argument; which I flatter myſelf will be thought equal to a thouſand. If the mountains were in any manner formed at the creation, I preſume they will not be ſuppoſed to have been formed on any other than the third day, when the dry land was ſeparated from the water. The bowels of the mountains, to the depth of 700 or 800 feet, (for to that depth, and more, they have been dug into,) have been found to contain ſhells of ſea-fiſh, and other marine ſubſtances, incorporated with, and lying under, rocks and

and marbles, in great quantities *: But none of these kinds of productions had received their specific natures and contextures at that time. It was not till the fifth day of the creation, that the waters were commanded to bring forth every living creature that moved in them, after their kind: Therefore, as none of them was in being on the third day; neither were the mountains, into the composition of which some of them have entered so deeply, in being, any more than they, at that time.

2. With regard to the second opinion, Dr. *Burnett* and Dr. *Woodward* suppose, that the mountains were formed at the time of the deluge. But each accounts for them in a different manner, peculiar to himself. Dr. *Burnett* supposes, they were raised, by the breaking of the crust of the earth; upon which it fell into such inequalities. But Dr. *Burnett's* theory in general, and this part of it particularly,

* Vide M. *Buffon*, Histoire naturelle, Art. viii. p. 96.

is

is ſo much exploded, that it needs not now any refutation.

Dr. *Woodward* ſuppoſes, "that, during the time of the deluge, whilſt the water was out upon, and covered the terreſtrial globe, all the ſtone and marble of the antediluvian earth; all the metals of it; all mineral concretions; and in a word, all foſſils whatever, that had before obtained any ſolidity, were totally diſſolved; and their conſtituent corpuſcles all disjoined; their coheſion perfectly ceaſing at leaſt to the greateſt depth we ever dig; if not quite down to the abyſs. All theſe, he ſays, were aſſumed up promiſcuouſly into the water; and ſuſtained in it in ſuch a manner, that the water, and bodies in it together, made up one common confuſed maſs—That at length all the maſs, that was thus born up in the water, was again precipitated, and ſubſided towards the bottom—That the ſeveral *ſtrata* of the earth were originally parallel, even, and regular—That they were continuous, and not broken;

broken; and that the whole maſs of the water lay then above them all; and conſtituted a fluid ſphere, environing the whole globe—That, after ſome time, the *ſtrata* were broken on all ſides of the globe—That they were diſlocated, and their ſituation varied, being elevated in ſome places, and depreſſed in others—That the agent, or force, which effected this diſruption, and diſlocation of the *ſtrata*, was ſeated within the earth—That the irregularities and inequalities of the terreſtrial globe were cauſed by this means; date their original from this diſruption; and are entirely owing to it—That the more eminent parts of the earth, mountains and rocks, are only the elevation of the *ſtrata*; theſe, wherever they were ſolid, rearing againſt, and ſupporting each other, in the poſture, whereinto they were put, by the burſting, or breaking up, of the ſphere of the earth—And in one word, that the whole terraqueous globe was, by this means, at the time of the

deluge, put into the condition that we now behold *."

But ſurely this could not have been the caſe. Rocks and cliffs, as well in the ſea, as on the ſhore, have withſtood all the impetuoſity of its waves, ever ſince the deluge: And could not the roots and ſides of the *everlaſting mountains*, which were *ſet faſt by the ſtrength* of the Almighty, have been proof againſt the waters of the deluge for five months? That there were mountains before the deluge, and that the ſame mountains ſurvived it, plainly appears from the hiſtory of it. This learned man himſelf makes the mountains the *ſtandards* and meaſures of the riſe of the water; which they could not have been, had they not have been *ſtanding*, when it did riſe, and overpour the earth †. In his zeal to refute Dr. *Bur-*

* Dr. *Woodward's* Natural Hiſtory of the Earth, part ii. p. 85.

† Dr. *Woodward*, *ib. p.* 281.

nett, he forgets that he here refutes himſelf.

There is another unſurmountable objection to his hypotheſis, which he himſelf was aware of. He ſays above, "that all foſſils, that had obtained any ſolidity, were totally diſſolved at the deluge, their coheſion perfectly ceaſing." If therefore this was the caſe, how came ſubſtances, that had not ſo firm a contexture, to eſcape diſſolution? "Why were not the ſhells, teeth, bones, and other parts of animal bodies; as alſo the trunks, roots, and other parts of vegetables*, diſſolved likewiſe; as well as the ſtone, and other mineral ſolids?" Of this he promiſes to

* That trees and vegetables ſurvived the deluge, appears from the inſtance of the olive leaf, which the dove had plucked off from a tree which ſhe found, upon her being ſent out of the ark the ſecond time. Whence it appears likewiſe, that the hills, upon which olive-trees chiefly grow, were left by the waters ſtanding—*Vide Bochart. Hieroz.* lib. i. cap. 6. *Noah's* planting a vine-yard likewiſe ſhews, that he muſt have found vines to plant from. And if ſuch tender parts of the creation eſcaped a diſſolution; much more would marbles and metals be proof againſt it.

aſſign

aſſign a phyſical reaſon, in the larger work which he propoſed*; which I have not ſeen, if it was ever publiſhed. The following juſt and ſpirited cenſure is alone ſufficient to deſtroy the credit of this whole hypotheſis.

"This ſtrange and bold hypotheſis is ſo little conſiſtent with the *Moſaic* hiſtory of the deluge—ſo contrary to the univerſal law of mutual attraction, and the ſpecific gravity of bodies—accounts for ſo few of the *phenomena* of the deluge—implies ſuch a new ſort of formation, or creation of the earth, at the deluge, without warrant for the ſame—and is ſo much more than his obſervations require, or will ſupport, that it cannot engage the aſſent of any conſidering perſon†." And yet it hath gained the aſſent of M. *Buffon*; as it happened to be favourable to his own *hypotheſis*, which I now come to conſider.

* *Woodward*, ib. p. 121.

† *Univ. Hiſt.* Vol. I. p. 211. 8vo.

3. What he ſuppoſes is, that the mountains were raiſed gradually, and ſucceſſively; by the action of the air, in winds, ſtorms, and hurricanes; but chiefly by the flux and reflux of the ſea; the currents at the mouths of rivers; and the conſtant motion which voyagers have obſerved in the main ocean, from eaſt to weſt: Whereby, he ſays, it gains upon the land on the eaſtern coaſts of the great continents, and recedes from it on their weſtern coaſts: By which ſeveral means he imagines the preſent earth, with all its *phenomena* of rocks and mountains, was once covered by the ſea; which threw them up in this manner; and that which is now ſea was land; and, I ſuppoſe, according to this ſuppoſition, is to be land again, in rotation, as before, if the world laſts long enough for the purpoſe *.

The bare mention of this whimſical opinion, is ſurely a ſufficient refutation of it;

* M. de *Buffon*, Hiſtoire naturelle, ſecond diſcourſ.

the

the cauſes aſſigned being by no means adequate to the effects; and ſome of them as likely to produce effects of a contrary nature. Whatever heaps of ſand, gravel, or ſtones, are carried one way by the flux of the ſea, are in a great meaſure carried back by the reflux. The ſand-banks, which are raiſed on a lee-ſhore, would go but a little way towards the raiſing of mountains. Winds and hurricanes, though they ſometimes blow together heaps of ſand, in ſandy deſerts, yet theſe are but ſand ſtill, and are never known to riſe to any conſiderable height; and ſuch ſtorms are more likely to throw down rocks and mountains by their violence, than to raiſe them. Where the land gains upon the ſea, common obſervation informs us, that it is ſo far from riſing into hills, as to be quite flat: Nor are the conſequences which he draws from the ſuppoſed motion of the ſea, from eaſt to weſt, ſufficiently ſupported by facts; nor by the deſcriptions which are given us of the great continents: Not to

ſay, that many inſtances might be produced, which contradict them, were it neceſſary to deſcend to particulars.

Theſe are all the hypotheſes of any note, that I have ſeen, concerning the origin of mountains; neither of which, for the above reaſons, I think, can merit approbation. I ſhall therefore proceed to lay down what I apprehend to be the true cauſe and occaſion of them; and likewiſe to give an account of the time and manner of their formation.

From what hath been ſaid, it appears. That the mountains were not coeval with the earth; and yet that they were not of ſo late a date as the flood. They muſt, therefore, have reared up their aweful heads at ſome time between theſe two periods. It will be ſeen hereafter, that the beginning of their exiſtence is reducible within ſtill a narrower compaſs.

When God pronounced a curſe upon the ground, for *Adam's* tranſgreſſion, as we do not know how far this ſentence extended, nor

nor how deeply the earth was affected by it; ſo there is no neceſſity for confining it to the ſurface; nor doth it ſeem improbable, but that great alterations were made, not only in the quality of the outward ſoil, but even in the very bowels of the earth by it: In ſhort, that thoſe vaſt chains of wild and deſolate mountains—thoſe ſtupendous heights and precipices, and thoſe hideous barren rocks, were then thrown up, and appointed to remain, as the ſignal monuments of the divine diſpleaſure at the diſobedience of man; and as the puniſhment of his ingratitude, in the abuſe of the bounties of his ſituation, in a paradiſe, which was vouchſafed, as a pledge of a paradiſiacal earth, and ſtate, to him, and his lateſt poſterity.

And it muſt be acknowledged, there was a moral fitneſs and propriety, becoming the wiſdom and juſtice of the Creator, in thus adapting his puniſhment to his tranſgreſſion. The curſe on the ground was an early exemplification of the juſtneſs of the Pſalmiſt's

reflection. *A fruitful land maketh he barren, for the wickedneſs of them that dwell therein.* Pſ. cvii. 34. *That they might know, that wherewithal a man ſinneth, by the ſame alſo ſhall he be puniſhed.* Wiſd. xi. 16.—*Adam* had ſinned with the fruit of the earth; therefore the earth was made to withdraw her fruit from him. Fertile plains inſtantly ſtarted up into bleak and dreary mountains: And the richeſt and moſt delightful ſpot in the world was transformed into an inacceſſible and ignivomous waſte; as will be ſeen hereafter.

As I apprehend, that the tranſgreſſion of our firſt parents was the moral or inciting cauſe of the production of the mountains: So I think, that the natural cauſe, or means made uſe of by the Almighty, for the effecting of this great purpoſe, was that of an univerſal earthquake.

I ſhall, firſt, make ſome previous remarks relative to this ſuppoſition. 2. I ſhall examine what traces there may be in the hiſtory of the fall, which afford any grounds

grounds for it. 3. What countenance it may have from other parts of ſcripture. 4. What ſupports may be drawn for it, from the appearances of nature, and the opinions of philoſophers.

1, If we caſt our eyes round the creation, and ſurvey the whole extent of it, we ſhall not find, that the curſe on the ground appears any where ſo viſibly, to ſuch an extent, and in ſuch a degree, as in the dreary waſtes of the mountainous and rocky parts of the earth, which cover ſo large a ſhare of its ſurface.

Thoſe vaſt regions are, for the moſt part, bleak and barren, cold and comfortleſs to dwell in. Large tracts of them are abſolutely uninhabitable, and afford ſcarce any, or very little, ſuſtenance or ſhelter, for man or beaſt; except beaſts of prey, which have their haunts in them. What neceſſaries of life they afford, are drawn from them by much labour; and, when obtained, are poor in kind, and yielded very ſcantily. Great treaſures, it

is true, are dug out of the bowels of the mountains; but not without infinite toil and expence. For the acquiring of them, multitudes are enſlaved, to enrich a few; and many more are impoveriſhed, than enriched by them. The wretches, who are condemned, or condemn themſelves, to work in the mines, endure incredible hardſhips; being forced to penetrate the very rocks for bread, and to extract their daily food out of ſtones—to work like moles—to live in dungeons—to run perpetual riſques of their lives—to breath in an unwholeſome air—ſubject to peſtiferous damps; and ſeldom ſeeing the light of the ſun. Theſe poor creatures groan under the curſe the moſt of any, to procure what often proves a curſe to the poſſeſſor.

A ſerious and impartial contemplation of the condition in which both the exterior face of nature, and its interior frame, at preſent lie, furniſhes at leaſt a ſtrong preſumption, that it did not come in this ſtate out of the hands of the great Crea-

tor,

tor. *In wiſdom did he make all his works* *: *They were done in judgment from the beginning, and from*, or at, *the time he made them, he diſpoſed the parts thereof; none of them hindering another* †: But *all things being ordered in number, meaſure, and weight* ‡. Accordingly, God declared his approbation of them, when, upon a review of all and every part of his creation, he repeatedly pronounced the whole to be very good.

Hence, therefore, there ſeems to be good reaſon to conclude, that there was then no real blemiſh, irregularity, or diſproportion of parts, in any of the works of the creation—That each, and every part, was placed in the ſituation and direction, which was moſt natural to it; and moſt conformable to the eſtabliſhed laws of nature—And that the ſeveral *ſtrata* of the earth were regular, plain, and parallel to

* Pſ. civ. 24.

† Eccluſ xvi. 26, 28.

‡ Wiſdom xi. 20. A like ſentiment to this was adopted by the old heathen philoſophers, who reckoned the great architect of the univerſe, Αιει γεωμετρειν.

each

each other; the heavieſt, according to the laws of gravity, ſinking loweſt, and the lighteſt lying uppermoſt. This is the natural ſtate and order of the material creation; which every part of it, when left to itſelf, always falls into, by that original law of gravitation impreſſed upon the whole.

But now view the ſeveral layers of the earth, in their preſent ſituation; and you will ſee them ſhattered, diſlocated, and diſperſed on all ſides of the globe, and lying in all kinds of direction; without any regard to this great and univerſal law, and often contrary to it, and to all the other laws of nature.

They have, in a word, all the appearance of ruins—ruins indeed that are truly great, noble, and venerable *; But they are nevertheleſs ruins ſtill.

And

* We admire the ruins of antient ſtructures, for the veſtiges of art and deſign, which we diſcover in them; and even from a certain beauty that there is in the ruins themſelves, which no art can imitate.

The

And the various *ſtrata* have this appearance, not only on the ſurface of the earth, in hilly and mountainous countries, which may partly be owing to the flood, and other cauſes; but even in the very bowels of it, as far as human induſtry hath been able to penetrate; theſe different parts of different and very heterogeneous kinds, being commixt, and, as it were, huddled together, in every manner of direction, without regard to any law, or order, or any apparent deſign whatſoever. The moſt diſtant, diſſimilar, and diſcordant parts of nature, are thus heaped and jumbled together into one confuſed maſs: Parts of fiſhes, ſome entire ones, ſea ſhells,

The ruins of nature have an unſpeakable air of ſtateline ſs and magnificence. The infinite variety of figures, into which the hills are caſt, affords a pleaſure and entertainment, which is ever diverſified, and ever new. The wild confuſion in which they lie; mountains, regardleſsly as it were, heaped upon mountains, diſplays the noble boldneſs of a free and maſterly hand; whilſt their grandeur fills the mind, and impreſſes upon it an aweful veneration.

and

and other marine productions, are often found encloſed in the bowels of the higheſt mountains, and buried in the bottoms of the deepeſt mines: And theſe frequently appear incorporated with ſtones, marbles, metals, and all kinds of foſſils and mineral concretions.

From the confuſion which appears in the conſtituent parts of the material world; and from the moral confuſion likewiſe, which, both the one, and the other, were introduced by the fall, I apprehend the world came to have the name, תבל, given it; from the root בלל, *to confound*: The ſame root from which בבל, *Babel*, comes; which ſignifies *confuſion**.

* *Schindler* reſolves the meaning of תבל, into the confuſion of the habitable world, conſiſting of ſuch a variety of parts, and of animals, by which it is inhabited. But there may be variety without confuſion; as there is in the world in this reſpect. The old tranſlators of the Pſalms render תבל, by the *round world*; whence they ſeem to think it includes the idea of rotundity; which I cannot find it doth. Probably they had the *vulgate* in their eye, which tranſlates, *orbis*.

But

But the wild deſolations of nature appear no where ſo obvious, ſo ſtriking, and ſo great, as in the formation of mountains. "When one conſiders the height of theſe hills, (ſays Bp. *Burnett*, ſpeaking of the *Alps*) the chain of ſo many of them together; and their extent, both in length and breadth; if at firſt he thinks of the old fables of laying one hill upon the top of another; he will be afterwards apt to imagine, according to the ingenious conjecture of one that travelled over them oftner than once, that theſe cannot be the primary productions of the Author of nature: But as the vaſt ruins of the old world; which, as he ſuppoſes, at the deluge, broke here into ſo many inequalities*; for want of knowing what other cauſe to aſcribe them to.

It is farther remarkable, that great quantities of fixt ſalt, ſand, and other vitrified, calcined, and fuſed ſubſtances, are con-

* Bp. *Burnett's* Letters from Italy, p. 14.

tained

tained in the bowels of the earth. Nay ſome maintain, that the different *ſtrata*, which cover the terreſtial globe in general, may be conſidered, as being vitrified; or as conſiſting of matter analogous to glaſs, having the moſt eſſential properties of it—That, for inſtance, there reſults from a compoſition of flint and glaſs, a perfect claiy earth; and clay and ſand are formed of the vitrified droſs of the earth, when it was in a ſtate of liquefaction by fire *.

Many

* Les differentes couches, qui couvrent le globe terreſtre étant encore actuellement, ou de matieres que nous pouvons conſiderer, comme vitrifiées, ou de matieres analogues au verre, qui en ont les proprietes les plus eſſentielles, et qui tout ſont vitreſcibles; et que d'ailleurs, comme il eſt evident, que de la décompoſition du caillou, et du verre, qui ſe fait chaque jour ſous nos yeux, il reſulte une véritable terre argilleuſe; ce n'eſt donc pas une ſuppoſition precaire, ou gratuite, que d'avancer, comme je l'ai fait, que les glaiſes, les argilles, et les ſables, ont été formés par les ſcories, et les écumes vitrifiées du globe terreſtre; ſur tout lorſqu'on y joint les preuves *à priori*, que nous avons données, pour faire voir, qu'il a été dans un état de liquefaction, cauſeé par le feu.

M. *Buffon*, hiſtoire naturelle. Art. vii. ſub fin.

Hence

Many attempts have been made to account for theſe various *phenomena*: But no account ſeems ſo probable, as that they proceeded from an univerſal earthquake; which, if it did not ſhake the foundations of the earth, to its very centre, yet agitated and rent it to ſuch a depth, as mankind hath never been able to fathom; and to that degree, as to diſunite and diſlocate the ſeveral *ſtrata* of the terreſtrial part, and to turn them, as it were, topſy turvy; the rocky and moſt ponderous bodies being toſſed to the ſurface; and the lighter earthy parts tumbled down under them, and falling

Hence M. *Buffon* was induced to conclude, that this earth made originally a part of the ſun; from the body of which it was broken off, by the ſtroke of a comet grazing upon it: Whilſt Mr. *Leibnitz* imagined it once was a ſun. ib. Art. i. And on the other hand, Dr. *Burnett* fancied, that when it ſhall have been ſufficiently purged, and purified by fire, it will at laſt become a fixt ſtar. Such are the reveries which learned men have gone into, from the traces of fire, which they have obſerved in the matter of the earth; and which it is ſtill liable to: All which, I preſume, is more naturally accounted for in the manner here laid down.

among them in all manner of directions; the ſea, at the ſame time, being no leſs, whatever more, agitated; and ruſhing, with all its contents of all kinds, into the openings and hollows, *quâ data porta*, made by the heaving up of the mountains; and, filling every cavity and crevice, depoſited and left ſome of its remains behind it every where; upon its receſs into the place before appointed for it: And the marine and terrene ſubſtances, thus mixing, and incorporating together, the whole is found in the ſame ſtate at the preſent time, exhibiting, as was ſaid, one general ruin: Or, if there be in the whole globe of the earth any ſort of a regular diſpoſition of parts; it is in places too deep for our line; all the reſearches of philoſophers, hitherto having terminated in raking into the ruins of the exterior cruſt, in which they have found ſufficient employment *.

And this great earthquake, being cauſed by fire, generated, and kindled within the

* Vide *Buffon*, ib. p. 110.

bowels

bowels of the earth, as earthquakes are generally ſuppoſed to be cauſed; this fire became ſo intenſe, and burnt with ſuch vehemence, as to melt and fuſe*, to vitrify and calcine, ſuch ſubſtances as were liable, by their natures, to be affected by it, in theſe ſeveral ſorts of manner, reſpectively: Agreeably to what is frequently obſerved in the contents of burning mountains, thrown up by *Volcanoes*, in theſe times.

Dr. *Halley* ſuppoſed, that the ſea, at the beginning of the world, was very little, if at all, impregnated with ſalt; but that it came to be more and more ſo by degrees, as the rivers carried the ſalts of the earth

* Hence *Tubal Cain's* invention of braſs and iron, Gen. iv. 22, may more eaſily be accounted for; having found theſe metals ready fuſed by the late earthquake, and reduced to a ſtate fit for uſe. The diſcovery of *Corinthian* braſs, we know, was owing to the burning of *Corinth*: And other metals are found at this time within the bowels of the earth in a perfect ſtate, which is not otherwiſe to be accounted for. What is pitcoal but a kind of ſtone, or mineral ſubſtance, charred, or reduced to a coal, by the operation of fire, as its name, *Lithanthrax*, imports?

into it. But whence came the land, any more than the ſea, to have any ſalt in it? And to what other cauſe is this ſaline quality, in the one, or the other, to be aſcribed, but to fire? Of which I take ſalt to have originally been the production.

That the mountains in general were raiſed by earthquakes, ſuch obſervations, as the foregoing, have induced many naturaliſts to conclude; as will appear from the opinions of ſome of them, which will be recounted hereafter: At preſent I proceed to conſider, the ſcripture account relative to this ſubject; which I ſhall begin, with examining the hiſtory of the fall, in this reſpect; which was the ſecond head I propoſed to treat of.

2. After our firſt parents had eaten the forbidden fruit, the firſt thing that they heard was *the voice of the Lord God walking in the garden, in the cool of the day* *.

What kind of voice, think we, could this have been? If you ſay, it was like a

* Gen. iii. 8.

comm on

common human voice; I ſhould be glad to know, to whom he ſpake, and about what: For as yet, he had not called unto *Adam*. I ſhould likewiſe be glad to know what is meant by *walking in the garden*. If you underſtand it of God's *taking a walk*: That is ανθρωποπαθως indeed, and is ſurely too low a ſenſe. By the voice of the Lord is often in ſcripture meant thunder; and certainly *a glorious voice* it is, becoming the dread majeſty of him who utters it. Thus, *The Lord thundered in the heavens, and the Higheſt gave his voice* *. *The voice of the Lord is upon the waters: The glorious God maketh the thunder—The voice of the Lord is mighty in operation—The voice of the Lord breaketh the cedar-trees. The voice of the Lord divideth the flaſhes of fire*, alluding to the flaſhes of lightning which generally accompany thunder. *The voice of the Lord ſhaketh the wilderneſs* †.

* Pſ. xviii. 13.

† Ibid. xxix. 3, 4, 5, 7, 8.

Why therefore might not the voice of the Lord, which *Adam* and his wife heard, have been thunder likewise? So some interpreters understand it. *The voice*, מתהלך, *traversing the garden* *; or rather continuing to traverse, and rowl, בגן, *in*, or *over* the garden, לרוח היום, *together with the wind of that day* †; a very remarkable

* Audiverunt vocem Dei itantem. *Iun. et Tremell.* Where we see, that the word which we translate *walking*, is applied to the voice, *itantem*, moving about to and again, or, as I have rendered, *traversing* or continuing to traverse, the word being in the reciprocal conjugation. This word is so applied elsewhere יהי קול השפר הולך *The voice of the trumpet sounded long.* Exod. xix. 19. A parallel expression to קול מתהלך, in the place before us, I take to be קול צערה in 2 Sam. v. 24. *The sound of a going. Let it be*, saith the Lord to David, *When thou hearest the sound of a going in the tops of the mulbery trees.*

†With regard to the use of the prefix, ל, in this sense, we find it in the like sense elsewhere, ברחים למטר עשה *He maketh the lightnings with the rain.* Jer. x. 13. The whole verse runs thus — *When he uttereth his voice, there is a multitude of waters in the heavens; and he causeth the vapours to ascend from the ends of the earth: He maketh the lightnings with rain; and bringeth forth the wind out of his treasure.* Of the senses in which the above particles are here used, see *Nold. Concord.*

one:

one: ה being taken emphatically; and the wind of that day may well be ſuppoſed to have been a very tempeſtuous one; as well as the thunder of long continuance; on which ſuppoſition, היום may be underſtood elliptically, for, כל היום.

Grotius, and others, ſuppoſe the wind of that day was an uncommon one, and more boiſterous than uſual; ſuch as that *great and ſtrong wind*; which *rent the mountains, and brake in pieces the rocks, before the Lord*; when he paſſed by *Elijah* *; or that *mighty ruſhing wind*, which filled the houſe, where the apoſtles were aſſembled on the day of *Pentecoſte* †. Theſe were tokens of a benign preſence. What, think we, muſt have been the caſe, when the Almighty deſcended in wrath, to paſs ſentence on creatures who had ſo highly offended him? No wonder they ſought where to hide their guilty heads from the vengeance of

* 1 Kings, xix. 11, 12.

† Acts, ii. 2.

their incenſed Maker, though in vain*, *Adam* might well be addreſſed on this occaſion, in the words of the ſon of *Sirach*; which ſeem to allude to him. *Say not thou, I will hide myſelf from the Lord — Behold the heaven, and the heaven of heavens, the deep, and the earth, and all that therein is, ſhall be moved, when he ſhall viſit*; eſpecially when he viſiteth in anger. *The mountains alſo, and foundations of the earth ſhall be ſhaken with trembling, when the Lord looketh upon them* †.

I heard thy voice in the garden, ſays *Adam*; *and I was afraid*. Though *the ſound of a ſhaken leaf* might have ſcared the guilty: Yet how muſt his fears have been heightened by this terrible voice and this aweful preſence of the Almighty? This prepared him for what was to follow.

* From this circumſtance of their hiding themſelves from the preſence of the Lord God, Bp. *Patrick* infers, that there was the appearance of an extraordinary preſence of the Son of God, or of the *word*, as *Onkelos* paraphraſes.

† Ecclus xvi. 18, 19.

I ſhall

I ſhall conſider the divine ſentence no farther than as it relates to the preſent ſubject.

Curſed is the ground for thy ſake — Curſed to the very centre, for aught we know. There is indeed no neceſſity for ſuppoſing the curſe to have ſunk ſo deep: But it is no great depth, in compariſon with the bulk of the earth, to ſuppoſe it penetrated ſo far as to produce the mountains: Nor have we any authority to confine it to the ſurface; though that might be ſufficient for the production of thorns and thiſtles.

The mountains, as we have ſeen, have the moſt ſevere and ſtriking effects of the curſe upon them, of all the parts of the creation; and carry the ſtrongeſt expreſſions of the divine diſpleaſure at that ſin, which was the parent, and inlett of all others; and which therefore required above all others, to be thus ſignally animadverted upon: And it was becoming the dignity of the Maker and Governor of the world to ſet up ſuch monuments of his deteſtation of evil, as ſhould be no leſs laſting and apparent, than the ſpreading nature of it; and the diſmal

diſmal effects of that corruption, with which it infected the whole race of mankind.

There are other traces in the hiſtory of the fall, expreſſive of the divine diſpleaſure, analogous to theſe which we have taken notice of.

We are informed, that when God drove our firſt parents out of paradiſe, *He placed at the eaſt of the garden of Eden, Cherubims, and a flaming ſword, which turned every way, to keep the way of the tree of life* *. So we tranſlate, agreeably indeed to all other verſions, antient and modern, which invariably follow each other. But I do not ſee what the ſword hath to do here, or how it came to be introduced; when there is another more natural ſenſe, of which the words are equally capable; and ſo obvious a one likewiſe, that it never would have been overlooked by all; but for a ſervile attachment to authority; and a bigoted regard for the maſoretical pointing. This ſenſe I ſhall give in the following

* Gen. iii. 24.

literal

literal tranſlation from the original; which always ſhould be preferred to a metaphorical one, where the paſſage admits of it.

And he placed before the garden of Eden, eaſtward, Cherubim, with a deſtroying fire; which ſpread itſelf every way, to keep the way of the tree of life *.

This was ſuch a natural fence as effectually prevented all approaches to it. It was *unto it a wall of fire round about* †. To uſe the figurative ſtile, in which God expreſſes himſelf by his prophet; wherein he poſſibly alludes to this incident, which it is literally applicable to.

* אה להט החרב are the words which I tranſlate, *a deſtroying fire*, or flame; the force of which the emphatical ה is very expreſſive of. But according to the received notion of חרב, as ſignifying, *a ſword*, the prefix ה hath very little meaning. According to this ſenſe, the literal rendring is, *the flame of the ſword*, המתהפכת, *turning itſelf about*; not brandiſhed by one of the *Cherubim:* Of the uncouthneſs of which ſenſe, I leave the reader to judge.

† Zech. ii. 5.

Lactantius

Lactantius had a juſt ſenſe of this paſſage, which he expreſſes thus. *Ipſumque paradiſum igni circumvallavit, ne homo poſſet accedere* *. And *Grotius* agrees with him, though he doth not ſeem to have been aware of this paſſage of *Lactantius*. *Senſus eſt*, ſays he, *igne impervio obſeptum paradiſum.*

A learned writer of our own ſuppoſes, that this fire proceeded from the accenſion of ſome inflammable matter, round about the garden; which excluded all comers to it, till ſuch time as the beauty of the place was defaced †. And he had very good grounds for this ſuppoſition: For he refers to ſeveral antient writers, *Pliny*, *Plutarch*, *Strabo*, and *Curtius*; who give an account, that the country about *Babylon* abounded with an inflammable bitumen, called *Naptha*; and that there was a certain plain, in which it daily flamed out. Their teſtimonies are collected by *Grotius*, on the place ‡.

* Inſtit. Div. lib. ii. cap. 12.

† *Nichols*, Conf. with a Theiſt, part I.

‡ Vide *Grot.* annot. ad locum.

Now

Now here is another inſtance, near akin to the foregoing ones, wherein God expreſſed his ſore diſpleaſure at man's tranſgreſſion. And if the whole face of nature was thrown into ſuch diſorder, as hath been obſerved, on account of it, it would be thought very ſtrange, if the ſpot, in which the ſcene of this unhappy event lay, ſhould eſcape without any marks of his reſentment. It might, on the contrary, be expected, that ſome ſpecial, and ſtill ſeverer tokens of it ſhould be here exhibited. Accordingly, as we have ſeen, that the earth in general trembled, and hove into mountains at it: So here, moreover, the divine wrath was kindled into a fire. And it is obſervable, that earthquakes, and firy eruptions, often attend each other. This fire burſt out, and raged with ſuch vehemence, as utterly to deſtroy that delightful habitation, in which God had placed his then innocent creatures; ſo that it could never afterwards be diſcovered, notwithſtanding it is ſo particularly

pointed

pointed out, its ſite delineated, and its boundaries circumſcribed: Notwithſtanding, likewiſe, the moſt diligent ſearch hath, age after age, been made for it. God, for wiſe reaſons of his Providence, ſeems to have made uſe of this, and other means, which will be mentioned preſently, in order to its total deſtruction. If the garden of *Eden* had been ſuffered to continue undeſtroyed, it is poſſible the tempter might have excited his votaries to make it the ſcene of ſome idolatrous rites or other, to keep up the remembrance of his triumph over the Creator; for ſuch undoubtedly it would be reckoned, as well as over his creatures: To prevent which perhaps it was, that God was determined to deſtroy the place; as the body of *Moſes* was concealed for the like reaſon.

It might, however, be proper for *Moſes* to give a deſcription of it; if for no other reaſon, yet to ſignify, that this was no allegorical paradiſe—that it had an exiſtence in fact—that it was ſituated on this earth;

and

and not any where else, as some, in despair of finding it here, vainly imagined. At the same time it served to exercise the diligence of many, in their enquiries after it, however fruitless they have hitherto been.

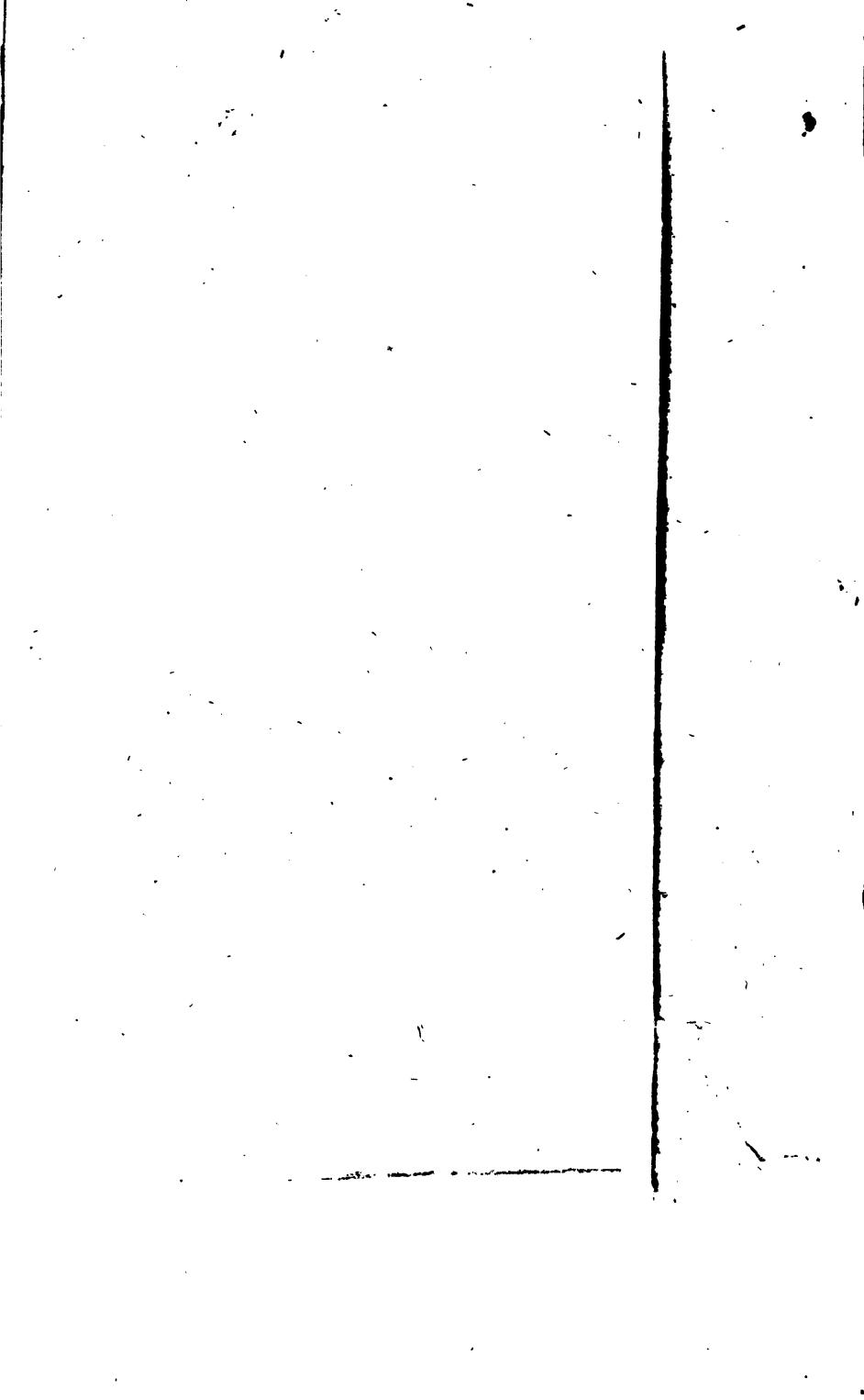
If I may be indulged a conjecture, among others, I apprehend the garden of *Eden* was planted in a *peninsula*, formed by the main river of *Eden*, on the east side of it, below the confluence of the four lesser rivers, which emptied themselves into it, somewhere about the 27th degree of north latitude, which is now all swallowed up by the *Persian* gulf. *From thence*, says Moses, *it*, the river that went out of Eden, *was parted*, or branched out, *and became into four heads*; that is plainly, to my apprehension, the four fountain-heads of the rivers; for a river can properly have no other head. These he traces the rivers up backwards to, and is very descriptive in his account of them; they being all well known in his time, and all keeping their distinct courses, till they met all together,

much lower down than they do at preſent; of which ſome proof will be given preſently; however, from various cauſes, two of theſe rivers, the *Tigris* and *Euphrates*, have ſince changed their courſe, and run into each other; though they ſeparate again, and fall in ſeveral different branches into the *Perſian* gulf.

The firſt river, *Piſon*, ſo called from its irrigating and fertilizing the country it runs through, I take to be that river, which, according to our moſt approved modern maps, branches out from the *Euphrates* at *Baſra*, ſomething above lat. 30. and empties itſelf into the *Perſian* gulf, ſomething below lat. 27.; forming, with the *Euphrates* and the ſea, the iſle of *Chader*. This I take to be the land of *Havilah*, which this river thus *encompaſſeth*; anſwering the deſcription with great exactneſs *. *There is gold—And the*

* This removes a difficulty ſuggeſted by the *univerſal hiſtorians*, of conceiving how a whole land can be encompaſſed by a river, without being an iſland, See vol. i. p. 118.

gold



gold of that land is good.—This country is a part of *Arabia*, which is famous for the fineſt gold. *There is bdellium and the onyx ſtone.* The *bdellium* is ſuppoſed by *Bochart* to be pearl, which is fiſhed for, and found in great abundance in the *Perſian* gulf; and the weſtern coaſts of it are no leſs famed for precious ſtones *.

The ſecond river, *Gihon*, is ſo called from a word which ſignifies *to bend*, in alluſion to its bending courſe; whereby it is fitted, together with the *Hiddekel*, in a manner to *encompaſs the whole land of Ethiopia*; it being probably one of thoſe rivers, which fall into the *Perſian* gulf on the eaſtern ſide of it; but which it is difficult to determine, from the imperfect repreſentation which we have of them in our maps.

The only card we have to direct us in our ſearch for the *Gihon*, is that of the

* See Bp. *Patrick* in loc. There is a great pearl fiſhery at a place called *Catif*, a little below the place where the river, here ſuppoſed to be *Piſon*, diſcharges itſelf into the *Perſian* gulf.

country which it is ſaid to compaſs: This is *the land of Ethiopia*, in the *Hebrew*, *Cuſh*. Not to wander into remote countries to ſeek out this land, there is a province on the eaſt ſide of the *Perſian* gulf, in which this name is preſerved, called *Chuſheſtan*; which, therefore, may be preſumed to have been this land of *Cuſh**. This country is bounded on the eaſt by the river *Tab*, as deſcribed in the map annexed, which is ſuppoſed by ſome to be the *Paſitigris* of the antients: Nor can I find any river that bids fairer for being the *Gihon*.

It is the general opinion, that the third river, *Hiddekel*, ſo called from its rapidity, is the *Tigris*, which name it hath for the ſame reaſon. But this notion, if taken in the groſs, is wrong, and requires ſome reſtriction. The *Hiddekel goeth toward the eaſt of Aſſyria*. But the *Tigris*, according to *Ptolemy*, is the weſtern boundary of

* Here *Cuſh* and his family firſt ſettled and flouriſhed, before they migrated into *Arabia*, and thence into *Ethiopia*.

See, The Evidence of Chriſtianity from Facts, Vol. i. Diſc. vii. p. 281.

Aſſyria,

Aſſyria, and its courſe is from the north-weſt to the ſouth; its ſource being out of the *Thoſpitis palus* in Mount *Niphates*, according to *Strabo*; which is full north of the Perſian gulf. This, therefore, doth not anſwer the deſcription of *Moſes*. But there is a river, which falls into the *Tygris* at *Seleucia*, which by the antient geographers is called *Gorgus*, and which comes from the eaſtern parts of *Aſſyria*, bordering upon *Media*; which, therefore, doth anſwer it with ſufficient exactneſs. And *Rauwolf* ſays, that when he was at *Caruch*, on the confines of *Media*, *Tigris* was ſtill called, in their language, *Hiddekel* *. The *Tigris* had more branches than one, and this it ſeems was a branch of it, and moſt probably was the ſame with the *Gorgus*; and as it ſo lately retained the name of *Hiddekel*, if it doth not retain it ſtill, ſurely no other river can come in competition with it for being the *Hiddekel* of *Moſes*. Its direction, firſt north from the gulf to

* See Bp. *Patrick* in loc. *Pliny* ſays it was called *Diglito*. And the *Arabians* call it *Deglat*. ib.

Seleucia, and then eaſtward, brings it to approach the ſource of the ſuppoſed *Gihon*, by which diſpoſition, it contributes with it, to incloſe the whole land of *Ethiopia*.

It goeth toward the eaſt of Aſſyria, ſaith *Moſes*; but the leaſt conſideration will convince us, that *Moſes* did not mean to ſay, that the *Tigris*, or any branch of it, goeth in a downward courſe, or runneth, from the *Perſian* gulf towards any part of *Aſſyria*: It is evident, therefore, from this inſtance, that he traces his rivers backwards to their fountain-heads.

The fourth river, *Euphrates*, was, and is, ſo well known, that the ſacred writer, not thinking it neceſſary to add any deſcription of it, contented himſelf with the bare mention of its name. Its *Hebrew* name פרת, is derived from פרר, *to divide*; this river being remarkable for its dividing itſelf; or rather for its having had the fate of being often divided by art, and forced out of its natural courſe, as it is known to have been, for the taking of *Babylon*; and at other times, navigable canals having been made out of it into the

Tigris:

Tigris: All which the inſpired chronologer muſt have had ſome foreſight of, when he adapted its name ſo well, to the ſeveral changes which it afterwards underwent.

The following remark, which I find in the Univerſal Hiſtory, is ſo full to my purpoſe, that I ſhall here ſubjoin it.

"It is highly probable, that the *Euphrates*, at firſt, emptied itſelf into the ſea, by a mouth of its own; and that its waters were afterwards conveyed by art, partly into the *Tigris*, and partly into the marſhes of *Chaldea* — Of this opinion, among the antients, was *Pliny*; who, ſpeaking of the *Euphrates* and *Tigris*, tells us; that the mouths of theſe two rivers were, according to ſome, twenty-ſeven, according to others only ſeven miles diſtant; that they were both navigable; but that the *Orchenians*, and other neighbouring people, had long ago ſtopped the courſe of the *Euphrates*, to water their lands; ſo that it was no longer conveyed into the ſea, by a mouth of its own; but by that of

the *Paſitigris**." One of the mouths of the *Tigris*, being, it ſeems, the *Paſitigris*, in his account.

This is exactly agreeable to the *Moſaical* deſcription of the four rivers, as having diſtinct and ſeparate channels each; which they preſerved till they diſcharged themſelves all together into the great *river, which went out of Eden to water the garden.*

This, in which all the others were collected, one would think, could not fail of being well known; and, above all the reſt, might be thought to merit deſcription. But we do not find any; nor is it ſaid what became of it, after it went to water the garden; nor whither it bent its courſe from thence. This I know not how to account for, but from its being loſt, together with the garden, which it watered: And where could they have been loſt, but in the *Perſian* gulf?

* Univ. Hiſt. vol. iv. p. 340. Where a map of *Meſopotamia* and *Babylonia* may be ſeen; in which the antient courſe of the *Euphrates* is pointed out. V. *Plin.* lib. vi. cap. 27.

Here

Here therefore, upon the whole; if we make but the proper allowances, for the great diſtance of time, and the alterations which are known to have happened, in the face of this country, above all others, as well as in the courſe of the rivers—And eſpecially, if we allow for the effects which the deluge may naturally be ſuppoſed to have had upon it; and that a writer who lived after it, was giving the geography of a place, as it had been before it; at the ſame time ſuiting his deſcription to the ſtate and appearance of its environs, in the age in which he lived—With theſe allowances, and in this view, we muſt acknowledge the deſcription given by *Moſes* of paradiſe, to be full, accurate, and intelligible, beyond what any uninſpired writer could pretend to give *. The charge of imperfection therefore in the *Moſaical* deſcription of *Eden*, brought by the *Univerſal Hiſtorians*, I will venture to pronounce to

* The ſketch annext, will render the foregoing account of paradiſe, of the rivers which watered it, and of the adjacent country, more intelligible.

be unjuſt; and but ill-ſuiting the regard, which, on all other occaſions, to do them juſtice, they fail not to ſhew for the *Moſaical* writings; which do not ſtand in need of the poor apology which they make for them in this inſtance. Their raſh cenſure proceeds from their miſapprehenſion: Nor indeed have I met with any writer, who got hold of the right clue, for tracing out this intricate labyrinth with ſucceſs: Whence all their embarraſſment, and uncertainty.

To return from this long digreſſion, though it is none from the main deſign; there are grounds to conclude, from the foregoing obſervations on the hiſtory of the fall, that it was attended with great commotions in the earth and air, with thunder, wind, tempeſt, and eruptions of fire; and therefore, not improbably, with an earthquake; by which the mountains were thrown up, in conſequence of the curſe on the ground; which they bear viſible indications of.

3. Let us now examine what countenance this ſuppoſition may have from

other parts of ſcripture. The royal *Pſalmiſt*, in celebrating the praiſes of God, *Pſalm.* xviii. for his deliverance from his enemies; is elevated by the ſpirit which inſpired him, far above his ſubject; and introduces the interpoſition of the Deity in ſo majeſtic and ſolemn a manner, to deliver him from his enemies; and with ſuch tokens of indignation againſt them, as exceed all parallel: And all the circumſtances of the deſcription are ſo ſublime and aweful, that they ſeem to allude to ſome more extraordinary occaſion, than the profeſſed deſign of this ſong.

Read the whole pſalm, and you cannot help thinking that part of it, which is contained between verſes the *ſeventh* and *fifteenth* incluſively, to be a digreſſion; the ſtile and matter being ſo different; and the *ſixth* and *ſixteenth* verſes connecting very well without it. It is certainly not applicable to *David's* caſe, as we read of no ſtorms of hail, or thunder, or earthquakes, expreſsly ſent, as judgments upon his enemies:

Much

Much leſs can we conceive the Deity ſhould interpoſe, in ſo conſpicuous and dreadful a manner, to execute his vengeance upon them. Neither do we know of any other occaſion, mentioned in ſcripture, or elſewhere, which was of ſuch importance as to demand, or deſerve, being dignified with ſuch a pompous train of appearances.

God's deſcent upon mount *Sinai* was indeed attended with the like circumſtances of terror: But this deſcent was not made in wrath, with an intent of puniſhing offenders; but with the gracious deſign of giving the law to his people.

We have another original of this pſalm, or ſong of *David*, in 2 *Sam.* xxii. I ſhall follow that in the book of *Pſalms*, as being rather fuller, and more correct; noting the differences in *Samuel*, though the ſenſe is but little affected by them. The paſſage, I mean, is as follows.

Pſ. xviii. 7. *The earth trembled and quaked: The very foundations alſo of the hills*

hills ſhook, and were removed, becauſe he was wroth *.

Ver. 8. *A ſmoke aſcended from his preſence: And a fire at his command conſumed; ſo that coals were kindled at it.*

Alluding to the conſuming fire, which was kindled in paradiſe, as explained above. It is again alluded to, ver. 12, 13.

Ver. 9. *He bowed the heavens alſo, and came down; and darkneſs was under his feet.*

Ver. 10. And he rode upon a Cherub, and did fly: He was ſeen † flying upon the wings of the wind ‡.

This Cherub was probably *one* of thoſe, that, having attended the retinue of the

* 2 Sam. xxii. 8. *The foundations of heaven moved.* Which Bp. *Patrick* explains by the parallel place in the pſalm, of mountains lifted up to heaven.

† In ver. 11. of *Sam.* the original hath רָאָה, *he was ſeen*, for רָאָה, *he flew*; which variation might happen by the miſtake of one letter for another. However, I have preſerved the ſenſe of both; as we cannot warrant the excluding of either.

‡ *The wings of the wind*—*The wind of that day*, as obſerved above, was a very remarkable one.

Almighty,

Almighty, in his deſcent, were afterwards ſtationed, to guard the entrance of paradiſe.

Ver. 11. *He made darkneſs his ſecret place, round about him: His pavilion was dark waters*; in which he was involved *; *even thick clouds of the ſky.*

Ver. 12. *At the brightneſs of his preſence, his clouds diſperſed:* And diſcharged *hail ſtones, and coals of fire*; as in ver. 8 †.

Ver. 13. *The Lord alſo thundered in the heavens: And the higheſt gave his voice* — That voice of the Lord God walking in the garden, *Gen.* iii. 8. as explained above — *the*

* 2 *Sam.* hath חשרת, for חשכת; which in the margin, is rendered *binding of waters.* I have endeavoured to include both.

† The latter hemiſtic is wanting in *Samuel.* Inſtead of which it hath, *coals of fire were kindled.*

‡ *Sam.* xxii. and Pſ. xviii. are two originals of the ſame divine poem, with many variations between them. The MSS. likewiſe of both have many variations; of which Dr. *Kennicott* hath given a curious ſpecimen. Diſſert. ii. p. 568.

Bp. *Hare*,

the hail-ſtones and coals of fire *, ſtill continuing.

Ver. 14. *Yea he ſent out his arrows, and ſcattered them: And he ſhot* † *out lightnings; and diſcomfited them.*

Thunder is generally accompanied by lightnings; the arrows, by which the Almighty diſperſed and diſcomfited the tempter, and his rebellious crew.

Ver. 15. *The chanels of waters were ſeen, and the foundations of the world were diſcovered,*

Bp. *Hare* juſtly obſerves, that ſome of the diverſities muſt have been original in each. It is therefore raſh to correct the one by the other; or to pronounce this, or that part, to be an interpolation. *Davidis* priùs hunc pſalmum rudiore quodam modo, et ſtilo compoſuit, qualem hic habemus: Poſtea vero limatum magis tradidit ſacerdotibus; et talis extat in libro pſalmorum.

Tirinus in Synopſ. crit. ad 2 *Sam.* xxii.

* The ſame hemiſtic is wanting in 2 *Sam.* ver. 14, as in the foregoing verſe. Dr. *Kennicott* ſuppoſes it to be an interpolation here. But, for the above reaſon, I have preſerved it in both places.

† ויב *He ſhot out*, is not in *Samuel.*

at

at thy rebuke, O Lord, at the blaſting of the breath of thy diſpleaſure *.

Such were the effects of the earthquake mentioned *ver.* 7, by which the offended Creator ſignified his diſpleaſure at man's diſobedience, and chaſtiſed him for it! And a prodigious earthquake that muſt have been, beyond what hath ever ſince happened, to be attended with the natural conſequences here aſcribed to it.

This was a very glorious and magnificent, and at the ſame time, a very dreadful and tremendous ſcene, on whatever occaſion it was exhibited; which could have been none other, than ſome very extraordinary and weighty one. The earth and even the heavens tremble, and are convulſed to the very centre, at the approach of the offended Creator.

Smoke and fire iſſue out of his preſence. The heavens do homage to him, and in

* For *chanels of waters*, Samuel reads, *chanels of the ſea*: And for *thy rebuke, O Lord*—*the rebuking of the Lord*, and *the blaſting of the breath of his noſtrils.*

obeiſance

obeiſance bend themſelves downwards, as it were, to accompany him in his deſcent. The glorious *Cherubim* are proud to be employed, in ſupplying the place of a carriage; and wing their way with the rapidity of the wind. Dark waters, and thick clouds, form his pavilion all around; which being diſperſed by the brightneſs of his preſence, fall down in ſhowers of hail, accompanied with thunder and lightning. Theſe were the arrows of the Almighty, which his enemies were not able to withſtand. And, as this aweful ſcene is uſhered in, ſo it is cloſed, with a tremendous earthquake; which made bare the foundations of the earth, and diſturbed the whole frame of nature.

Now all this can hardly be thought a merely imaginary ſcene, that never had any exiſtence, or foundation, but in the writer's fancy. Such a ſuppoſition would ſavour too much of a levity and wantonneſs, ill becoming the Spirit of God to dictate. There muſt therefore have been ſome real grounds on which it ſtood, ſome ſuitable

ſuitable occaſion for its having actually happened.

Now, I ſhould be glad to know, what occaſion ſo extraordinary, and of ſuch importance, there could have been, in any period of the world, ſince the foundation of it, as to call for ſuch an extraordinary viſitation; but this, which in its nature was of ſuch univerſal concern; including the fate of *Adam*, and all his race; in which the whole creation was likewiſe involved? We ſaw in the foregoing obſervations, on the hiſtory of the fall, and its conſequences, that there were ſome circumſtances of terror attending it. I take this, in the place before us, to be a fuller, and more circumſtantial deſcription of the Almighty's deſcent on this occaſion.

Milton, who paints after ſcripture, as well as nature, deſcribes the conſequences of the fall, in much the ſame manner with what we have ſeen.

When *Eve* had eaten the forbidden fruit, he ſays,

Earth

Earth felt the wound, and nature from her ſeat
Sighing through all her works, gave ſigns of woe,
That all was loſt.

[*Paradiſe loſt*,] B. ix. l. 782.

When *Adam* had eaten, he adds,

Earth trembled from her entrails, as again
In pangs; and nature gave a ſecond groan.
Sky lowr'd, and mutt'ring thunder, ſome ſad drops
Wept at completing of the mortal ſin,
Original. lb. l. 1000.

In conſequence of this he repreſents the Creator, as commanding his angels to make changes in the heavens, and elements. Accordingly,

——— The ſun
Had firſt his precept, ſo to move, ſo ſhine,
As might affect the earth with cold and heat,
Scarce tolerable; and from the north to call
Decrepit winter; from the ſouth to bring
Solſtitial ſummer's heat —— lb. l. 651.

Theſe changes in the heavens, though ſlow produc'd,
Like change on ſea, and land, ſidereal blaſt,
Vapour and miſt, and exhalation hot,
Corrupt and peſtilent — lb. l. 692.

Thunder and lightning are the arms, with which he makes the Almighty to vanquiſh *Satan*, and his apoſtate aſſociates; and with which likewiſe he arms the *Meſſiah*; agreeably to Pſ. xviii. 14. above taken notice of.

— In his right hand,
Graſping ten thouſand thunders, which he ſent
Before him; ſuch as in their ſouls infix'd
Plagues: Then aſtoniſh'd, all reſiſtance loſt,
All courage, down the idle weapons drop'd.

——— His arrows
Glar'd lightning, and ſhot forth pernicious fire,
Among th' accurſt, that wither'd all their ſtrength;
And of their wonted vigour left them drain'd
Exhauſted, ſpiritleſs, afflicted, faln.
Book vi. l. 835. 845.

We have ſome farther countenance from ſcripture for what hath been advanced, that the mountains owe their origin and production to the fall.

The civth Pſalm ſeems to allude to this event; and hath ſome of the ſame images, with thoſe of the xviiith.

Ver.

Ver. 3. *Who layeth the beams of his chambers in the waters: Who maketh the clouds his chariot; Who walketh upon the wings of the wind.*

Ver. 4. *Who maketh his angels ſpirits, his miniſters a flaming fire.* אש להט.

This, I doubt not, alludes to the *Cherubim*, and the להט ה חרב, *the deſtroying flame*, as is above tranſlated; which were placed before the garden of *Eden* *.

Upon important occaſions, we learn, that God often makes uſe of the miniſtry of his angels, to execute his great purpoſes: But we know of no other occaſion, on which they have been commiſſioned to appear in fire, or to employ it, excepting on this.

From ver. 5, to the 9th, there is a ſhort account of the alterations made in the terraqueous globe; and of its different ſtates; from the creation to the deluge.

He laid the foundations of the earth — Or, *He founded the earth upon her baſes.* Marg.

* Gen. iii. 24.

that it ſhould not be removed for ever; from the place appropriated to it, by any changes, be they ever ſo great, that ſhould be made in it.

Ver. 6. *Thou coveredſt it with the deep, as with a garment. The waters ſtood above the mountains*; before the third day, when the dry land appeared: Or, according to the old tranſlation, and ſome others, *in the hills* *, after the dry land appeared; the waters running between the hills †, or eminences, filling the hollows, and leaving only the moſt raiſed and elevated parts of the earth uncovered by them; a ſmall portion of which would be ſufficient for the firſt pair, and even their deſcendants for ſome generations. But,

Ver. 7. *At thy rebuke they fled; at the voice of thy thunder they haſted away.*

* So *Munſter* renders.

† The orignal words, עַל הָרִים, may be rendered, *between* the hills, or raiſed grounds: For הָר doth not neceſſarily ſignify a high mountain; but may be interpreted of any kind of eminence. And for this ſignification of עַל, V. *Noldii* Concord. in loc.

Rebuke always proceeds from diſpleaſure; with which it is ſometimes joined. *So have I ſworn, that I would not be wroth with thee, nor rebuke thee* *. But there was no occaſion for either rebuke, or diſpleaſure, nor probably was there any thunder, at the creation; as obſerved before: Neither can it well be conceived, that ſuch effects of the divine indignation could have been cauſed by any leſs provocation, than the tranſgreſſion of our firſt parents. Theſe words may be underſtood, either of the waters, or of the criminals, *Adam*, *Eve*, and the ſerpent. Then it was, that

Ver. 8. *The mountains aſcended, the valleys deſcended* †, *unto the place which thou haſt founded for them.*

Where we may obſerve, that there was no mention of vallies before. The word in the original is בקעות; which literally

* Iſa. liv. 9.

† So our marginal tranſlation, and ſome others render,

ſignifies *fiſſures*, or apertures in the earth; ſuch as are made by earthquakes; and of which there were none before this event, ſo large and deep as to merit notice. Then follows,

Ver. 9. *Thou haſt ſet a bound, that they may not paſs over: That they turn not again to cover the earth.*

Thou didſt ſet the waters, ver. 6, 7, their bounds after the deluge, in which they had tranſgreſſed them.

We may here obſerve farther, that as there was no occaſion for rebuke at the creation: So neither was there any cauſe for rebuking the waters at the deluge.

They overflowed the earth at the divine command; and, having been inſtrumentally employed in drowning the world, were withdrawn in mercy.

Theſe ſeveral great revolutions ſeem to be hinted at in this paſſage; which, conſidered in this view, confirms the ſenſe in which the xviiith pſalm was interpreted; and contributes to the ſupport of the general ſuppoſition—That the mountains were

thrown

thrown up at the fall, as part of the curſe on the ground, and by means of an univerſal earthquake.

Theſe obſervations on the manner in which the Almighty viſited our firſt parents, receive no ſmall confirmation from this conſideration, that in the ſcripture accounts in general of his perſonal viſitation of mankind, his preſence is, for the moſt part, if not always, attended with ſome aweful tokens of it; eſpecially when he viſiteth in anger: Nor is it but for ſome important purpoſe, on ſome ſpecial and extraordinary occaſion, that he doth vouchſafe his preſence to men.

Thus when the Lord deſcended upon mount *Sinai*, *the mountain was altogether on a ſmoke, which aſcended as the ſmoke of a furnace, with clouds, and thick darkneſs, becauſe the Lord deſcended upon it in fire; and the whole mount quaked greatly* *. *The earth*

* Exod. xix. 18. It is ſaid, ver. 16, that *all the people that was in the camp trembled.* And elſewhere we learn, that even *Moſes* could not help betraying his

earth ſhook: The heavens alſo dropped at the preſence of God; even Sinai itſelf was moved at the preſence of God *.—*The mountains ſkipped like rams, and the little hills like lambs* †. As God gave his laws to the *Iſraelites*, attended with theſe circumſtances of terror, to enforce their obedience, and impreſs upon them the greater fear of tranſgreſſing them: So when the Son of God was to make his appearance in the fleſh, to reveal his laws to mankind, his coming was to be uſhered in with great convulſions and commotions, both in the natural and political world. *Thus ſaith the Lord of hoſts, Yet once more, it is a little while, and I will ſhake the heavens and the earth; and the ſea, and the dry*

fear on this dreadful occaſion, when he ſaid, *I exceedingly fear and quake. Heb.* xii. 21. It doth not appear, whence St. *Paul* had this account of *Moſes* ſaying theſe words. He muſt therefore have had it from ſome record, or tradition, that is now loſt; unleſs peradventure it be preſerved in the text of ſome *Hebrew* MS.

* Pſ. lxviii. 8.

† Pſ. cxiv. 4.

land;

land: And I will ſhake all nations; and the deſire of all nations ſhall come.*

Theſe were gracious purpoſes: How terrible then muſt viſitations for the tranſgreſſion of God's laws be? Earthquakes and hurricanes, thunder and lightning, as they are very aweful and terrible in their nature; ſo are they generally eſteemed as judgments and tokens of the divine diſpleaſure; and the hardieſt of mortals cannot help betraying their fears of the effects of them when they happen. They are accordingly often mentioned in ſcripture, as viſitations for ſin, or warnings for repentance. *Upon the wicked,* ſays the pſalmiſt, *he ſhall rain ſnares, fire, and brimſtone, and an horrible tempeſt: This ſhall be the portion of their cup†.* Again, *The Lord hath his way in the whirlwind, and in the ſtorm.—He rebuketh the ſea, and maketh it dry.—The mountains quake at*

* Haggai, ii. 6, 7.

† Pſ. xi. 6. Comp. Pſ. cxliv. 5, 6. And Iſa. ii. 19, 21 — xxiv. 18, 19, 20. Ezek. xxxviii. 18, 19, 20. Iſa. liv. 9.

him,

him, and the hills melt—His fury is poured out like fire, and the rocks are thrown down by him *. *At his wrath the earth ſhall tremble, and the nations ſhall not be able to abide his indignation* †. The noble hymn, in which the prophet *Habakkuk* repreſents the God of *Iſrael* marching before his people to deſtroy their enemies, and to conduct them into the promiſed land, contains theſe paſſages—*God came from Teman, and the Holy One from mount Paran—Before him went the peſtilence, and burning coals went forth at his feet—The everlaſting mountains were ſcattered: The perpetual hills did bow—The mountains ſaw thee, and they trembled—Thou didſt march through the land in indignation: Thou didſt threſh the heathen in anger* ‡.

It was in his indignation at the rebellion of *Korah*, *Dathan*, and *Abiram*, that the Lord cauſed an earthquake, by which

* Nahum, i, 3, 4, 5, 6.

† Jer. x. 10.

‡ Hab. iii. 3, 5, 6, 10, 12.

the

the ground opened, and ſwallowed them up: Whence fire likewiſe iſſued, and deſtroyed two hundred and fifty more of thoſe who joined them *. And whenever he ſees it expedient, in his wiſe government of the world, *he ſhall make the creature his weapon for the revenge of his enemies — and the world ſhall fight with him againſt the unwiſe* †. On leſs provoking occaſions, God has ſent thunder and rain, in the time of wheat harveſt, to convince the Iſraelites of their wickedneſs in aſking a king ‡. It was out of the whirlwind that the Almighty rebuked *Job* ||. And though the Lord was not in the wind, nor earthquake, nor fire, when he paſſed by *Elijah*; yet theſe were all indications of his preſence **.

But above all other inſtances of this kind, that earthquake, by which the rocks

* Numb. xvi.
† Wiſd. v. 17, 20, 21, 22.
‡ 1 Sam. xii. 17.
|| Job, xxxviii. 1.
** 1 Kings, xix. 11, 12.

were

were rent, the graves opened, and the dead raiſed, together with the preternatural darkneſs, both accompanying the ſufferings of the Saviour of the world, can be looked on in no other view, than as manifeſt tokens of God's wrath againſt his crucifiers, and of his deteſtation of the horrid deed they were perpetrating.

And when vengeance was to be executed upon them for it, it was foretold, that there ſhould *be famines, and peſtilence, and earthquakes, in divers places*, as ſigns of it — And *that after the tribulation of thoſe days, the ſun ſhould be darkened, and the moon ſhould not give her light, the ſtars ſhould fall from heaven, and the powers of the heavens ſhould be ſhaken* *. Accordingly the deſtruction of *Jeruſalem* was forboded by many ſtrange preſages, and attended by frightful appearances, earthquakes, and various calamities; ſuch as never were paralleled either before or ſince †.

* Matt. xxiv. 7, 29. Mark, xiii. 8, 25. Luke, xxi. 11.

† See Joſephus de bello Jud. cap. vii. et paſſim. And Grotius on Matt. xxiv. 7.

From

From theſe ſeveral paſſages and inſtances we ſee that earthquakes, and ſuch like terrible viſitations, are repreſented in Scripture, as marks of God's anger, and as his ſcourges and judgments upon guilty mortals: Or at leaſt, as warnings to deter mankind from daring impieties and tranſgreſſions. We may add, that they have accordingly been looked upon as ſuch, by all thoſe that had any ſenſe of religion, or awe of a Deity, in all ages; even by heathens, who had received no impreſſions from revelation, and were influenced only by their own natural feelings and obſervations.

Diodorus Siculus reſolves the final cauſe of earthquakes into the anger of the offended Deity at the ſins of men, for which he viſited them in this manner; though, it ſeems, ſome in thoſe days were for aſcribing them to natural cauſes, excluſively of any interpoſition, or concern of the Deity: As there are not wanting thoſe, even in theſe enlightened times, who would willingly deprive him of all interpoſition,

interpoſition, even in the moſt extraordinary events, and would fain exclude all final cauſes out of the world.

Περὶ δὲ τῶν συμπτωμάτων μεγάλης ουσης ζητήσεως, οἱ μὲν φυσικοὶ πειρωνται τὰς αἰτιας των τοιούτων παθων ουκ εις το θειον ἀναφερειν, ἀλλ' εἰς φυσικάς τινας, καὶ καθηκαισμένας περιςασεις. Οἱ δ' ευσεβως διακειμενοι, προς το θειον, πιθανάς τινας αἰτιας ἀποδιδουσι του συμβαντος, ὡς δια θεων μηνιν γεγενημενης της συμφορας, τοις εις το θειον ασεβησασι *.

When ſuch prodigies were not looked upon as viſitations and puniſhments inflicted for paſt offences; they were interpreted, as warnings and preſages of future calamities, and impending judgments.

Thus the poet, in enumerating the prodigies which forboded the civil wars of *Rome*, relates in general

—— Superique minaces
Prodigiis terram implêrunt, æthera, pontum.

* Diod. Sic. lib. xv. tom. ii. ed. Rhodom. Vide etiam tom. i. lib. ii. p. 116—tom. ii. lib. xi. p. 48. Vide Herodian. Hiſt. lib. vi.

And

And among other particulars, he mentions,

—— Crinemque timendi
Sideris, et terris mutantem regna cometen.

And again,

—— Tum cardine tellus
Subsedit, veteremque jugis nutantibus Alpes
Discussere nivem. *Lucan*, Pharſ. lib. i. 524, &c.

Many authorities of this kind might be collected. Now as the natural notions of mankind concur with the ſacred writings, in interpreting thoſe dreadful appearances of various kinds, which are often productive of great calamities, and ſometimes threaten the diſſolution of nature, as viſitations of the offended Creator, and puniſhments inflicted by him, for the tranſgreſſions of his rebellious creatures; what offence—what inſtance of tranſgreſſion, would be more likely to cauſe ſuch viſitations, than that of our firſt parents? This, being the firſt ſin, and the parent and inlet of all others, and the corrupt fountain out of which all evil flowed, required, above all others, to be thus

thus ſtrongly animadverted upon; and to have ſome monuments of the divine deteſtation of it ſet up, which ſhould be as laſting as the corruption, with which it infected the whole race of mankind. And if earthquakes are expreſſions of the divine diſpleaſure; and if the mountains were formed by them, I ſhould be glad to know, when, and upon what other, ſo great provocation as this, they could have been formed by this means?

I come now, in the laſt place, to enquire, what probable grounds there are for ſuppoſing that the mountains were ſo raiſed, from the appearances of nature, and the opinions of philoſophers.

And here we ſhall find many inconteſtable inſtances in fact, which confirm this hypotheſis concerning the origin of mountains.

That of *Montagno nuovo*, near *Puzzole*, is well known; eſpecially from that full and accurate account of it, which the publick

publick hath lately been favoured with *. In Sept. 1538, this mountain was raiſed from a plain, by the force of earthquakes, in the ſpace of 48 hours, to the height of 150 feet, being more than three miles in circumference. With regard to this remarkable *phenomenon*, the ingenious writer, here referred to, obſerves, that its having been raiſed by mere exploſion, proves, "that all the neighbouring mountains, which are compoſed of the ſame materials, and have exactly, or in part, the ſame form, were raiſed in the like manner †." Among theſe, he acquaints us that *Monte barbaro*, "which joins immediately to it, and exactly reſembles it in ſhape and compoſition, is at leaſt three times as conſiderable ‡; and muſt there-

* Obſervations on Mount *Veſuvius*, &c. by the Hon. Sir *W. Hamilton*, K. B. which are ſo pertinent to the preſent ſubject, that I ſhall beg leave to make a few extracts from them.

† P. 126.

‡ P. 146.

fore have been raiſed by an eruption proportionably more dreadful."

From the remarks which he had been making for ſix years, in the compaſs of twenty miles or more, round the city of *Naples*, he ſays he is convinced, beyond all doubt, that the whole circuit within the boundaries marked in a map annexed to his letters; which compoſed all that part of the continent, which lies between the *Appenines* and the ſea, "was wholly and totally the production of ſubterraneous fires *. That he is convinced, the great mountain in the adjoining iſland of *Iſchia* was thrown up by degrees; and had no doubt but the iſland itſelf, and the other neighbouring iſlands, roſe out of the ſea, in the ſame manner, as ſome of the *Azores* †. — That he had perceived a ſmall mountain, within the antient crater of Mount *Veſuvius*, in a growing ſtate — had watched, and minutely marked the

* P. 90.

† P. 48. 150. Of theſe ſome account will be given hereafter.

increaſe

increaſe of it from time to time—and that in eight months it had grown to the height of 185 *French* feet *. That he made no doubt but that the whole of Mount *Veſuvius* was formed in the ſame manner.—That from a particular ſurvey of Mount *Etna*, and its environs, it appeared to him, that this large mountain †, and all the other mountains of *Sicily*, of which he had counted 44 on one ſide of the iſland, had evidently been raiſed by exploſions."

This gentleman lays it down for a rule, that "wherever he ſhall meet with a mountain, in any part of the world, whoſe form is regularly conical, with a hollow crater on its top, and one ſide broken, he ſhall be apt to decide ſuch a mountain having been formed by an eruption; as both on *Etna* and *Veſuvius*, the mountains formed

* P. 21.

† The baſis of Mount *Etna* is 100 *Italian* miles in circumference; its perpendicular height is more than three *Italian* miles; and the *lava* which ran from one of its eruptions is fourteen miles in length, and in many parts ſix in breadth. Ib. Letter iv.

by explosion are without exception according to this description *." He seems inclined to think that many mountains have been formed by *Volcanoes* which have little of any such appearance. And upon the whole, says he, "If I were to establish a system, it would be, that mountains are produced by *Volcanoes*, and not *Volcanoes* by mountains †." I doubt not but that his judicious observations will contribute to remove that ignorance of the theory of the earth, which he complains of ‡; and will give much light both to the theory of the earth in general, and to the theory of the mountains in particular.

I cannot yet part with this curious observer of nature. He remarks, that these her great operations, meaning *Volcanoes*, are much less out of her common course,

* Ib. p. 77.

† P. 52. I think with him, that the subterranean fires, which produced burning mountains, were likewise the cause of mountains in general; but that they did not in general burst out into *Volcanoes*.

‡ P. 9. et alibi.

than

than is generally imagined; and that they are not confined to any one part of the globe, but exiſt in the four quarters of it *. To confirm this obſervation, it may not be amiſs to follow him a little farther, and to give ſome inſtances of the effects of theſe *phænomena* in other countries.

He takes notice of the new iſland †, he might have ſaid iſlands, in the bay of *Santorini*; which were raiſed in the year 1709, from the bottom of the ſea, by earthquakes; and remained firm land; of which a very particular relation is given by father *Goree*, from his own obſervations taken upon the ſpot, at the very time it happened ‡.

Another iſland in the ſame ſeas, between *Nio* and *Andro*, had before, within the memory of man, been raiſed in the ſame manner. All the iſlands in the bay

* P. 160, 162.

† P. 157.

‡ See the Hiſtory of the Royal Academy of Sciences in *Paris*, for the year 1708.

of *Santorini*, not excepting *Santorini* itſelf, are ſaid to have been likewiſe thrown up from the bottom of the ſea, by earthquakes. Many new iſlands have from time to time been appearing in thoſe ſeas; and proceeding from the ſame cauſe: For which we have, not only the tradition of the natives, but the teſtimony of many antient writers, as far back, as *Strabo*, *Pliny*, *Juſtin*, *Seneca*; who, as well as ſeveral others, have recorded the riſe of them, ſome in one age, and ſome in another, ever ſince *. There are accounts of new iſlands, or additions made to the old ones, in thoſe ſeas, in the eighth, the fifteenth, and ſixteenth centuries. All this confirms the tradition concerning the hill of *Trezene*, celebrated by *Ovid*, having been raiſed in the ſame manner, by an earthquake; as the continent of *Peloponneſus*, in which *Trezene* lies, is waſhed by thoſe ſeas.

* See M. *Tournefort's* Voyage to the *Levant*, in his Deſcription of the Iſland of *Santorini*, Vol. i. p. 205.

To

To theſe accounts may be added, the appearing of a new iſland out of the ſea, amidſt a dreadful hurricane, in 1638, near the iſland of St. *Michael*, one of the *Azores*. *Gaſſendus* reports this iſland to be three leagues in length, and one and a half in breadth.

And in 1720, a new iſle appeared near that of *Tereery*; and in the following year, two others, between that and St. *Michael*; after an earthquake, and a torrent of fire, which gave birth to them *.

I ſhall only ſubjoin one other remark of Sir *W. Hamilton's*—that all the implements of ſtone, brought by Meſſrs. *Banks* and *Solander* from the new-diſcovered iſlands in the South-Seas, being evidently of ſuch a nature, as are only produced by *Volcanoes*; and no other kind of ſtone being to be met with in the iſlands; he was hence induced to think that theſe iſlands, at ſo great a diſtance from any continent, may have likewiſe been puſhed

* M. *Buffon*, ib. p. 196.

up from the bottom of the ſea, by the like exploſions *.

Theſe iſlands and hills having been thus raiſed by earthquakes, ſeem to be vouchſafed by Providence, as inſtances in fact, to convince us, that the hills and mountains in general were raiſed in like manner: "For if ſuch hills as theſe (to uſe Mr. *Ray's* words) have been elevated by earthquakes — why might not the greateſt, and higheſt in the world be raiſed in like manner, by a ſubterraneous *flatus*, or wild-fire, of quantity and force ſufficient to work ſuch an effect? that is, that bore as great a proportion to the ſuper-incumbent weight and bulk, that was to be elevated; as thoſe under theſe ſmaller hills, did to theirs. We cannot doubt this may be done, when we are well aſſured the like hath been done †."

Be it only farther conſidered — That there is no other known power in nature

* Obſerv. on Mount *Veſuvius*, &c. p. 157.

† *Ray's* Miſc. Diſcourſes, p. 155.

of

of ſuch force, as to come in competition with that of earthquakes, for this purpoſe; or that hath produced any parallel effects.

The power of ſubterraneous fires, and earthquakes, for the raiſing of mountains, may be judged of from the amazing fierceneſs, with which *volcanoes* in general rage, and particularly from the deſcription given us, of the ſtrength and fury of that fire, which threw up the iſland, in the bay of *Santorini*, juſt mentioned: Which burſt out with ſuch violent noiſes, as if ſix or ſeven pieces of canon were diſcharged at the ſame time, forming itſelf into a firy pillar, and making its way, through the ſea, from the bottom, to the ſurface of it; and then blazing to a great height in the air; the ſea being ſo far from controuling it, as to boil like a cauldron about it. Thus, in the language of the book of Wiſdom. *The fire had power in the water, forgetting his own virtue*, rather, by its own virtue;

and

and the water forgat his own quenching nature *. And ſuch was the intenſeneſs of the heat, that it calcined rocks, and caſt them up in huge maſſy pieces, toſſing them about, like bombs and carcaſſes, with ſuch force, that they were carried ſeven miles, before they dropt into the ſea; and theſe in ſuch quantities, as to form iſlands of unfathonable depths †, from their baſes, in the beds of the ocean, to the ſurface of them; and of ſuch firmneſs and ſtability, as to have towns and cities built upon them; capable likewiſe of being cultivated, and fertilized, for the ſupport of men and cattle. What hath happened in leſſer inſtances, might have been the caſe in greater.

* Wiſdom xix. 20. The words in the original are—πυρ ισχυσεν εν ὑδατι της ιδιας δυναμεως, και ὑδωρ της σβεστικης δυναμεως επελανθανετο.

† The port of *Santorini* is like a half moon in form. As fine a port as it ſeems to be, no ſhip can anchor in it: for no bottom could ever yet be found by the plumb line. *Tournefort*, ib. p. 204.

Earth-

Earthquakes, it is true, have tumbled down mountains, and have ſunk iſlands, as well as raiſed them. Rocks have been ſplit aſunder; cities overthrown; and the inhabitants buried in the ruins. Many dreadful inſtances of this ſort, both in former and latter times, might be collected. But all this ſerves only to prove in general the great force of earthquakes; and what aſtoniſhing changes have been, and may be, made by them, in the earth. On the one hand, plains have in many places been ſuddenly ſwoln up into hills; and hills, on the other hand, have been leveled with the plains; or have been removed, and rocked to and fro, and changed their ſituation.

Pliny gives an account of a very extraordinary prodigy, by an earthquake. *Factum eſt ſemel, quod equidem in Etruſcæ diſciplinæ voluminibus inveni, ingens terrarum portentum, Lucio Marco, Sex. Julio, coſſ. in agro Mutinenſi. Namque montes duo inter ſe concurrerunt, crepitu maximo adſultantes, rece-*

recedenteſque; inter vos flammâ, fumoque, in cœlum exeunte interdiu, ſpectante è viâ Æmiliâ, magnâ equitum Romanorum, familiarumque, et viatorum multitudine. Eo concurſu, villæ omnes eliſæ, animalia permulta, quæ intra fuerunt, exanimata ſunt, &c *.

This ſomething reſembles, and may ſerve to evince and illuſtrate thoſe paſſages in the *pſalms*, in the literal ſenſe, which mention *the leaping and ſkipping of the mountains; like rams, and of the little hills, like lambs* †. It is not improbable, but that a *phenomenon* of this kind might have been exhibited to the *Iſraelites* in the wilderneſs; moſt likely when they were at mount *Sinai*; which, we are expreſsly told, was then moved by an earthquake ‡.

When that terrible earthquake happened in *Jamaica*, in the year 1692, part of a mountain, not far from *Yall-houſe*, after it had made ſeveral leaps and removes,

* Hiſt. Nat. lib. ii. cap. 13.
† Pſ. lxviii. 16.—cxiv. 4, 6.
‡ Exod. xix. 18.

over-

over-whelmed a whole family, and a great part of a plantation; though a mile diſtant. And in the earthquake at *China*, 1718, ſeveral mountains were thrown over a plain, to the diſtance of above two leagues *.

In the account of the dreadful earthquake in the *Azores*, July 1757, ſome mountains are ſaid to have ſhifted places; and others to have entirely diſappeared; and a plain to have taken place of them—Some iſlands torn aſunder, and ſeveral new iſlands to have appeared. Theſe inſtances likewiſe contribute to confirm the literal ſenſe of the above paſſages in the *pſalms*.

The credibility of an univerſal earthquake may be evinced from facts; ſome very general ones having happened, which produced very great and aſtoniſhing effects; though not to be compared with that here ſuppoſed.

An earthquake happened under the firſt conſulſhip of *Valentinian* and *Valens*, which

* Hiſtory of Earthquakes.

was

was felt throughout the whole known world. It is recorded by *Ammianus Marcellinus*, partly in theſe words—

Horrendi terrores per omnem orbis ambitum graſſati ſunt ſubitò, quales nec fabulæ, nec veridicæ nobis antiquitates exponunt—Tremefacta concutitur omnis terreni ſtabilitas ponderis; mareque diſpulſum retrò fluctibus evolutis abſceſſit—valliumqve vaſtitates, et montium tunc, ut opinari dabatur, ſuſpicerent radios ſolis; quos primigenia rerum ſub immenſis gurgitibus amandavit—proinde, ut elementorum furente diſcordia, involuta facies mundi miraculorum ſpecies oſtendebat.*

The ſame earthquake is mentioned by St. *Jerom*, and other writers of that time, as being univerſal and very terrible in its effects†.

In theſe latter ages, the *Andes* of *Peru*, the greateſt and higheſt ridge of moun-

* Amm. Marcell. lib. xxvi. cap. 10.

† Hieronym. in Chronico, et in vitâ *Hilarionis*. *Socratis* Hiſt. Eccl. lib. cap. 3. *Oroſii* Hiſt. lib. vii. cap. 32.

tains

tains in the world, were, for ſome hundreds of leagues in length, ſo violently ſhaken by an earthquake in the year 1646, that many alterations were made by it throughout the extent of them *.

That terrible earthquake, which ſpent its rage chiefly at *Liſbon*, on Nov. 1, 1755, was ſuch, for the wideneſs of its extent, as well as the dreadful devaſtations it made, not only there, but in diſtant countries, that I queſtion whether it is to be paralleled by any inſtances of earthquakes, recorded in hiſtory.

It ſeemed to have ſhaken the greateſt part of the northern hemiſphere, including in a manner all *Europe*, from *Greenland*, in the north, to *Spain* and *Portugal*, ſouth, and *Italy* and *Germany*, eaſtward. It ſwept all the northern coaſts of *Africa*, from eaſt to weſt. It ſhot through the great *Atlantic* ocean; and viſited all the maritime parts of *North-America*, from *New-found-land*, to the *Weſt-Indies*.

* Ray, ibid. from Kircher's Arca Noæ.

This was followed by another very dreadful earthquake in *Aſia*, four years afterwards; of which the following account is extracted from a letter, which appeared in the publick papers, dated from *Tripoli*, in *Syria*, Dec. 13, 1759.

"This country is almoſt entirely deſtroyed by an earthquake, which hath been felt throughout an extent of a hundred leagues in length; and near as many in breadth, forming a ſpace of about a thouſand ſquare leagues; containing the chain of mountains, of *Liban*, and *Antiliban*, with a prodigious number of villages; the greateſt part of which is now nothing but a heap of ruins."

All theſe concuſſions undoubtedly were very ſtrong and general; and yet they bore but a ſlender proportion to the whole globe, and could have but very little effect upon the bulk of it.

With regard to this, M. *Buffon* hath made a calculation, in which he ſuppoſes, that ridge of high mountains, which traverſe

verſe ſouth *America*, from the point of the land of *Magellan*, to the mountains of *New Granada*, and the gulf of *Darien*, to be inſtantly raiſed by an earthquake; and he calculates the effect of it upon the reſt of the globe, in this manner:

This chain of mountains, he ſays, is about 1706 leagues in length, and the mean breadth of them is about 40; the whole ſurface, of which he computes to be 68000 ſquare leagues. The thickneſs, or depth, of the matter diſplaced, he ſuppoſes to be one league, from the mean height of the mountains to the foot, or baſe, of them. Then, ſays he, the force of the exploſion, or earthquake, raiſes a quantity of matter, which is equal to 68000 cubic leagues, to the height of one league. Now, the action and re-action being equal, this exploſion communicates to the reſt of the globe the ſame quantity of motion: But the whole globe, continues he, contains 123, 105, 238, 61 cubic leagues; of which the quantity of

motion being equal to that of 68000 cubic leagues raiſed one league: Hence, he concludes, it appears, that the force, which was ſtrong enough to diſplace 68000 cubic leagues of matter, and to remove it one league, could not diſplace the reſt of the globe one inch *.

Now, according to this calculation, an univerſal earthquake, acting with the above given force, on all parts of the globe alike, to the depth here ſuppoſed, would diſturb the frame of the earth in general very little, if at all. Nay, on the contrary, for the very reaſon of its being univerſal, and the effect of the re-action being alike in all parts; as the force in one point, for inſtance, would be oppoſed by an equal force in the contrary point to it, and ſo all around the globe; the conſequence

* M. Buffon, Theorie de la terre, Art. xvi. p. 191. The greateſt depth, to which mines have ever penetrated, have ſcarcely ever equalled one fixteen thouſandth part of the earth's diameter. Watſon on Chemiſtry, p. 38.

would

would be, that this would keep the main body of the earth perfectly at reſt; the ſeveral forces counteracting each other, and being all, by that means, quite deſtroyed by each other: In the ſame manner, as two non-elaſtic bodies, of equal dimenſions and weight, moving with the ſame degree of velocity, in a direct line towards each other, would both be ſtopt, when they met, and would continue in a ſtate of reſt.

From ſome ſuch obſervations, as the foregoing, and from a diligent attention to the nature of the materials of which the mountains conſiſt, and to the diſpoſition of their ſeveral *ſtrata*, many naturaliſts have been inclined to think, that they were raiſed by earthquakes.

We have already ſeen Mr. *Ray's* opinion in this reſpect, who I think led the way into this notion.

We have Sir *W. Hamilton's* opinion likewiſe before us, ſupported by ſuch a ſeries of inconteſtable facts, extending over the

face of a whole country, and grounded upon an ocular and diligent ſurvey of it, as goes near to eſtabliſh the univerſality of the doctrine, that the mountains in general were raiſed in the ſame manner.

Dr. *Woodward*, we have ſeen, aſcribes the elevation of them to ſome inward agent, or force; but doth not think fit to explain himſelf farther.

Lazzarro Moro, a *Venetian* writer's ſyſtem is, that all iſlands and mountains, wherein marine bodies are found, and of courſe the continents, which ſerve as baſes to theſe mountains—have all ſprung out of the boſom of the deep, by the efforts of ſubterranean fires; and this ſyſtem is in part eſpouſed by M. *de la Condamine* in his tour to *Italy**.

But it doth not follow, that becauſe the mountains were raiſed in this manner, their baſes, to ever ſo great a depth, were ſo formed likewiſe.

* Monthly Review, for *March* 1763, p. 219.

Even

Even M. *Buffon* allows the poſſibility of mountains having been raiſed by earthquakes; were it not evident, as he in his prepoſſeſſion imagines, that they are the effects of the ſea *.

Mr. *Needham*, from his diſcoveries of the nature of the *Aſbeſtos*, aſks, not without appearance of reaſon, Doth not this, with the diſcovery of *lava*, pumice-ſtone, iron in a perfect ſtate, and many other traces of fire, obſerved in moſt of the mountains; particularly in all the great chains, and remarkably in all thoſe under the *Equator*; which are the higheſt on the globe, ſeem to indicate, that the dry land, with all its eminences, was originally raiſed out of the waters, by the force of ſubterraneous fires †?"

But this is concluding too much: It is ſufficient that the mountains were raiſed by ſubterraneous fires, to account for the *phenomena*, which this curious gentleman

* Ubi ſupra, p. 191.

† Phil. Tranſ. N°. lxii.

obſerved; without extending the ſuppoſition to the earth in general.

Learned men, not ſuſpecting any cauſe, or occaſion, on which the mountains could be thus ſeparately, and excluſively of the reſt of the earth, thrown into their preſent ſhapes; took it for granted, that the whole terreſtrial globe, which they think was always invariably the ſame, obtained the figure it appears in, at one and the ſame time, that it came into exiſtence; not knowing how to account for its various appearances in any other manner.

From theſe conſiderations, and this view of the opinions of ſome of the moſt diligent and ſagacious obſervers of nature, it ſeems to be moſt probable, that the mountains in general were the effects of an earthquake; and that they did not proceed from any other cauſe.

Having now gone through the whole argument of this Theory concerning the Mountains, it may not be amiſs, for our

better

better recollection of it, to bring it into review, and ſee how it ſtands.

To clear the way, it was ſhewn, that all the chief hypotheſes; which have hitherto appeared concerning the origin of mountains, are liable to ſuch objections, as evince the futility of them.

1. That they could not be coeval with the creation, is ſhewn, as from other arguments, ſo eſpecially from one internal evidence, that many parts of their contents were not then extant in nature, as ſuch. 2. That they were not the effects, nor conſequences of the deluge, becauſe, as was ſhewn, it appears from ſcripture, that they exiſted before; neither, having exiſted, were they diſſolved by the waters of it, and reformed again; becauſe many other bodies, of a ſofter and more yielding contexture than the rocks and minerals contained in the mountains, ſurvived the efforts of the deluge, and even ſtill continue in a perfect ſtate.

3. It was ſhewn, that the mountains were not raiſed gradually, nor in any

manner, by the winds, or waves; becauſe there are no *data* ſufficient to ſupport ſuch a notion; and ſuch, as it reſts upon, counteract each other.

Theſe opinions having, for the above reaſons, been rejected; and the date of the origin of mountains having been reduced within the period between the creation and the deluge*; the account of them which is here propoſed, is, that they

* This period may be reduced within yet a narrower compaſs. Fire being the inſtrumental cauſe of the earthquake, which raiſed the mountains; and all metals being likewiſe the effects of fire; both were produced at the ſame time, as well as by the ſame cauſe: But the metals of braſs and iron were extant in the time of *Tubal Cain*, who taught the uſe of them. *Tubal Cain* was the ſeventh from *Adam*, in the ſame degree with *Methuſelah*; whoſe birth happened in the year 687 of the creation; and 969 years before the flood. The mountains therefore were produced before this time.

But were there not metals, and minerals, even gold and precious ſtones, it will be aſked, before it is here ſuppoſed there were mountains, or earthquakes to raiſe them;

they were produced on occaſion of the fall of man; and were thrown up, by an univerſal earthquake, as a part of the curſe denounced on the ground for man's ſake.

In proof of which, the following conſiderations have been offered—That as there is no other aſſignable cauſe of them within this period; ſo that there is a moral propriety in this—That the curſe is more viſible, and more felt, in this part of the creation, than in any other—That the mountains, from the confuſed ſtate of their ſeveral *ſtrata*, as well as

them; even in the paradiſiacal ſtate; as mention is made of gold, bdellium, and the onyx ſtone, in the deſcription of paradiſe? To this it may be replied, that this part of the deſcription doth not refer to the time when that ſtate exiſted; but to the *time of Moſes*; there being no verb in the original, nor other word, to fix the time. And therefore all tranſlations run in the preſent tenſe, as being the moſt proper. So we tranſlate—*The land of Havilah, where* there is *gold. And the gold of that land* is *good: There* is *bdellium, and the onyx-ſtone.* Gen. ii. 11, 12. It is not ſaid there *were* any ſuch productions there originally.

from

from their outward appearance, bear all the marks of ruins — That the effects of fire appear very visibly in many of the contents of them — And that therefore theſe ſeveral *phenomena* were the productions of thoſe ſubterraneous fires, which burſt into an earthquake, and produced the mountains — And that this hypotheſis beſt accounts for theſe *phenomena* — It hath been farther ſhewn, that, from an attentive examination of the hiſtory of the fall, it appears to have been attended with great commotions in the earth and air — with thunder, tempeſt, and eruptions of fire; and therefore probably with an earthquake too — where, by the way, an attempt was made to find out the ſituation of paradiſe — That there are ſome other paſſages in ſcripture, which ſeem likewiſe to give an account of an extraordinary preſence of the Almighty; and of his deſcent in dreadful Majeſty, accompanied with an earthquake, thunder, and lightning, when he

he came to paſs ſentence on the criminals—That, in the ſcripture-accounts in general, his perſonal viſitation of mankind is often, if not always, attended with ſome aweful tokens of his preſence, eſpecially when he viſits in anger—And that earthquakes, and the like terrible appearances, are ſet forth in the divine writings as marks of God's anger, and as his ſcourges and judgments upon guilty mortals—That they have been looked upon in the ſame view, by the wiſer heathens—That there are probable grounds in nature, for ſuppoſing that the mountains were originally all raiſed by earthquakes—That there have been ſeveral inſtances in fact of mountains and iſlands having been ſo raiſed, within knowledge—That there is no other power in nature adequate to the production of them—That the force, with which earthquakes act, hath been on ſome occaſions exhibited very viſibly, and ſubjected to the examinations of obſerving men, who have

conveyed

conveyed deſcriptions and accounts of them to poſterity; whence may be judged, how prodigiouſly great it is, beyond what could otherwiſe be conceived — That ſome very general earthquakes have been felt, that ſhook many kingdoms — and even whole continents — And that therefore an univerſal earthquake is the more credible — And that, ſuppoſing ſuch a one, which would have force ſufficient to raiſe all the mountains of the earth to their preſent height, yet it would be ſo far from having any fatal effects, that the bulk of the earth in general would not at all be diſturbed or affected by it. Laſtly, it hath been ſhewn, from the opinions of many modern philoſophers, which have been recited, that they ſeem to be coming into this notion, that the mountains in general were originally raiſed by earthquakes. And from all the foregoing conſiderations, there ſeems to be a fair preſumption, that they were raiſed by that, and no other means.

If

If this account of the riſe and production of the mountains, at the time, and upon the account, that is here ſet forth, appears ſatisfactory; it furniſhes an additional argument for the truth and reality of the fall of man; whence a better eſtimate may be formed of the effects and conſequences of it.

It is not many years, ſince the literal ſenſe of the *Moſaic* account of the fall of man was called into queſtion, and made the ſubject of controverſy *. To what was then offered, by many, in its defence, however ſufficient and ſatisfactory to all reaſonable and unprejudiced perſons; we have now an argument, before unthought of—An argument from fact, which appeals to our ſenſes; and hath, ever ſince the time of the unhappy event which cauſed it, appealed to the ſenſes of all mankind, in all ages, and all parts of the world, to this day; however it

* See the Hiſtorical Senſe of the *Moſaic* Account of the Fall proved and vindicated, 1751.

hath

hath happened not to have been attended to. If it carries conviction at preſent, it will make an additional inſtance, and be a freſh proof, of the growing evidence of revealed religion *.

This is a monument of that great revolution, which, for its antiquity, its permanency, and extent, its grandeur and awefulneſs, is beyond the poſſibility of a parallel in this world, becauſe the whole world is occupied by it.

What therefore are we to think of the cauſe of this ſad cataſtrophe? What ſentiments muſt we have, and what judgment are we to form, of the malignancy of that evil, which thus convulſed the whole frame of nature, and threw it into all this diſorder and confuſion? Surely this was no light offence, how light ſoever ſome may think of it, that was pregnant of ſo much miſchief, and drew after it a train of ſuch dreadful conſequences!

* See the Evidence of Chriſtianity deduced from facts, &c.

CHAP.

CHAP. V.

Of the universal Deluge.

THE *phenomenon*, which in order of time comes next under consideration, is the universal deluge: The scripture-account of it is as follows—

That *all the fountains of the great deep were broken up; and the windows of heaven were opened:* And that *the rain was upon the earth forty days, and forty nights,* in continuance: Whereby *the waters increased greatly, and prevailed exceedingly upon the earth:* To that degree, that *all the high hills and mountains that were under the whole heaven were covered;* to the height of *fifteen cubits upwards,* or, above the summits of them. This *Noah* might find by sounding,

ing, when the ark reſted; or by high water-mark on the ſides of it, which being the depth of water that it drew, was half its height. *The waters prevailed upon the earth*, at this height, *an hundred and fifty days*; at *the end* of which, and not before, *they were abated.* Theſe hundred and fifty days, were incluſive of the forty days and nights inceſſant rain; and made a period equal to five ſolar months of thirty days each; which having commenced on the ſeventeenth day of the ſecond month, from the autumnal equinox; when the antediluvian year, according to Abp. *Uſher*, did begin; and which anſwers to ſunday, *December* the ſeventh; the end of the hundred and fifty days fell on the ſeventeenth day of the ſeventh month, or, on wedneſday, *May* the ſixth. The flood, having continued ſo long without any abatement, now took a turn; God having cauſed a wind to paſs over the earth, and the two ſources which fed the waters being ſtopped and reſtrained, they fell ſo much on this day,

day, that the ark reſted on the mountains of *Ararat*: And from this time they *decreaſed continually until the tenth month*; to that degree, that on the firſt day of that month, on ſunday *July* the nineteenth, the tops of the neighbouring mountains began to appear.

In the order of the narration it next follows, that *it came to paſs, at the end of forty days*, that *Noah* ſent out a raven firſt, and then a dove, three ſeveral times, to ſee if he could diſcover any abatement of the waters: *The raven went forth to and fro*, without bringing him any good tidings: But the dove brought an olive branch in her bill, the ſecond time ſhe was ſent out; whence *Noah* knew, that the waters were abated: And the third time ſhe was ſent, ſhe returned no more.

But if the tops of the mountains appeared forty days, before either of the birds was ſent out, what occaſion was there for ſending them? And when ſent, how could they miſs of land to reſt upon? For

beſides, that land had been diſcovered ſo many days before, the waters muſt have greatly fallen in forty days after; and it was fourteen days more, before the dove returned with the olive leaf. For after her return the firſt time, it is ſaid, that *Noah* ſtayed *yet other ſeven days*, before he ſent her out a ſecond time; which implies; that he had ſtayed ſeven days after ſending out the raven, before he ſent out the dove at all. Now this makes fifty four days in the whole, ſince the ſummits of the mountains are ſuppoſed to have appeared; during all which time the waters muſt have continued decreaſing: And yet it is ſaid, that *the dove* could find *no reſt for the ſole of her foot*, at the end of this ſuppoſed period.

To ſay, as the commentators do, that the tops of the mountains were ſo covered with mud, that ſhe could not find any footing upon them; is by no means ſatisfactory. For what with the running off of the waters, and the conſtant blowing of the wind, the tops of the mountains would

would be quite dry, in leſs time than fifty, or forty days. The ſoil was probably waſhed off from the tops of many mountains, to the bare rocks; which would therefore be inſtantly dry, as ſoon as the waters had left them; ſo that there is no room for the ſuppoſition, that the dove could not find a dry ſpot to light upon; ſince the waters had left the tops of the mountains ſo long before. Beſides, that the reaſon for which it is ſaid, that the dove could not find where to reſt her foot, manifeſtly is, to ſignify that no land yet appeared; for the diſcovery of which ſhe had been ſent out.

The only proper ſolution of this objection, and what I apprehend to have been the real truth of the caſe, is, by reckoning the forty days, ver. 6, not from the firſt of the tenth month, ver. 5, when the tops of the mountains were ſeen; but from the ſeventeenth day of the ſeventh month, when the ark reſted, ver. 4: And by underſtanding what is ſaid of the de-

creaſing of the waters, till the firſt of the tenth month; and of the birds being ſent out, and returning, as coincident in point of time. For it is ſaid, ver. 9, when the dove took her firſt flight, that *the waters were on the face of the whole earth*; therefore, not excepting the mountains, which could not be ſaid, if the mountains appeared forty ſeven days before; much leſs, as the waters kept ſtill ſinking all the intermediate time. And the third flight of the dove being ſixty-one days, from the reſting of the ark, according to this interpretation, this was about twelve or thirteen days before the tops of the mountains were ſeen; during which time, the dove might have found the top of the olive-tree, from which ſhe had plucked a ſpray, ſtanding ſo much above the ſurface of the water, as to afford her a reſting place: Or ſhe might have diſcovered ſome other tree, or perhaps the point of a rock, to perch upon: And a few days after, the waters might be ſo much abated, as to render

render the diſtant ſummits of the mountains diſcernible out of the ark *.

Thus doth the narration appear to be conſiſtent: Nor is it unuſual, in the ſcripture-ſtile, to make references, which paſs over what immediately goes before; and to have reſpect to what is more remote.

To proceed: On the firſt day of the firſt month, anſwering to our twenty third of *October*; in the ſix hundred and firſt year of *Noah's* life, he removed the covering of the ark, to have a more extended and unconfined view of the whole horizon; and he ſaw the waters were gone, *and behold the face of the ground was dry.* However, he did not think it adviſable to remove out of the ark; but continued in it, till the twenty ſeventh day of the ſecond month, or the eighteenth of *December*, near two months more; when, by God's command, he came out of it;

* The dove moſt probably diſcovered land, before they in the ark did.

together with his family, and all the creatures that were with him; having continued in it a year and ten days, according to the ante-diluvian computation: Or a complete year of 365 days, according to the preſent reckoning *.

This is the purport of the hiſtory, which *Moſes* gives us of the univerſal deluge. With regard to this great event, three queſtions ſeem proper to be reſolved; The one of moral, the other two of natural conſideration.

1. What were the motives which induced the Creator thus to deſtroy the work of his own hands?

2. Where ſuch a vaſt collection of water was lodged, as was neceſſary for the purpoſe of an univerſal deluge?

3. By what means it was brought to over-flow the world?

With regard to the firſt of theſe queſtions: The ends for which the Creator

* Gen. vii. viii.

was

was moved to deluge the world, we may reckon to have been chiefly two, the firſt reſpecting the old world, the ſecond reſpecting the new. The former is attended with no difficulty.

The hiſtory itſelf expreſsly informs us, That the old world was deſtroyed for the wickedneſs of them that dwelt therein. Thus we are told, That *God ſaw the wickedneſs of man was great in the earth*—That *every imagination of the thoughts of his heart was only evil continually*—That *the earth was filled with violence, and all fleſh had corrupted his way upon the earth*; and had infected even the earth itſelf with corruption likewiſe: For that *God looked upon the earth, and behold it was corrupt*: And its corruption is aſcribed to that of man, as the cauſe of it. *For*, becauſe, *all fleſh had corrupted his way upon the earth*. Hence it appears, that the very matter of the earth was polluted by the impurities of its inhabitants.

For this cauſe, *It repented the Lord, that he had made man on the earth, and it grieved him at his heart*; and being therefore determined to cut off that generation, he declared, *the end of all fleſh was come*; and that he would *deſtroy them with the earth* *.

This was the motive which induced God to deſtroy the old world. This world was made for man, and he was inveſted with the poſſeſſion and dominion of it; but by the enormity of his tranſgreſſions, he incurred the forfeiture of his charter, and of his life; and therefore was puniſhed with the loſs of both together.

No other being could complain of injury: The Creator had the abſolute, and ſole right to his creation; and if he had thought fit to annihilate it, who could have ſaid to him, *What doſt thou?*

But God in judgment, remembered mercy, towards ſuch as were fit objects of it. *Noah*, and his family, found favour in his ſight; and were ſaved for the peo-

* Gen. vi. 5—13.

pling

pling of the earth anew: And the earth itſelf, for the better accommodation of its future inhabitants, was purged from its former pollutions, and endowed with many advantages, which the old world had not the benefit of, as will appear hereafter: So that the flood, which was the deſtruction of the one, was the enriching of the other; and the *curſe* on the earth, in conſequence of which it was drowned by it, was productive of a bleſſing; and proved to be for its good in the end.

It was the opinion of many of the antients, that the deluge was, *magnum mundi καθαρσιον*, the great luſtration of the world, and its expiation from the impurities with which it had been defiled by its former inhabitants*. *Jews*, heathens, and chriſ-

* Water hath ſo natural a property of cleanſing, that it hath been made the ſymbol of purification by all nations; and uſed as ſuch in the rites of all religions. Το ὑδωρ ἁγνιζει, ſays *Plutarch.* Quæſt. Rom. And the heathens uſed ſeveral kinds of baptiſm to expiate their crimes. *Tert.* de Baptiſmo. The religious application of it by *Jews* and Chriſtians is well known.

tians,

tians, were of this perſuaſion. *Philo* expreſſes the ſenſe of his own people, the *Jews*, when he ſpeaks of the Creator's cleanſing the earth by the waters of the deluge *. *Origen* gives the opinion both of *Jews* and Chriſtians, concerning the purgative quality of the waters of the deluge, which they compared to Chriſt; the former, as expected to come; the latter, as being come, to purge and purify the moral world from an inundation of ſin; as the natural world had been waſhed and purified by the deluge †: Which, he ſays,

* Ὁποτε γαρ την γην ὑδατι καθαιρειν ὁ Δημιουργος διενοηθη—Lib. *quod deterior potiori inſidet.* p. 186. The ſame ſentiment occurs elſewhere in *Philo*, and is expreſſed by him in a fuller manner, Μετα δε την καθαρσιν των ὑπο σελήνην, απολεσαμενης της γης, και νεας αναφανειστης, και τριαυλης, οιον εικος ειναι, ὁτε την αρχην, μιλα τε κοσμω παυλος εκλισηθ· προσεισιν εκ τε ξυλινε κατασκευασματος, αυλος και γυνη, κ τ λ. De vitâ Moſis, lib. ii. ſub fine.

† Origen. contra Celſ. lib. iv. p. 173. καθαρλυσμω καθηραιλι την γην, ὡς ὁ Ιυδαιων και Χριστιανων βελτιαι λογος.

both

both the one and the other thought it to have been. And upon good grounds: For we have St. *Peter's* authority for this notion; who reckons baptiſm, the great rite of purification in the Chriſtian church, to be *ἀντίτυπον*, the antitype of the water of the deluge *; which therefore was typical of baptiſm.

That the antient heathens were of the ſame opinion, we have *Origen* again to teſtify; who ſays, that ſome of the moſt reſpectable of the *Greek* philoſophers taught, that the deſtruction of mankind by water was a purgation of the earth †: And he elſewhere quotes a ſaying of *Plato's*, to the ſame purpoſe, That God deluged the earth, in order to purge it ‡: Which, though poſſibly meant of par-

* 1 Pet. iii. 21.

† Ἡ δ' ἐν τῷ κατακλυσμῷ διαφθορὰ τῶν ἀνθρώπων καθαρσίου ἕνεκεν τῆς γῆς, ὡς καὶ Ἑλλήνων οἱ μὴ εὐκαταφρονήτως φιλοσοφήσαντες εἰρήκασιν.

Origen, ib. lib. vi. p. 316.

‡ Πλατωνικῶς οὕτω λέγει· Ὅταν δ' οἱ θεοὶ τὴν γῆν ὕδασι καθαίροντες κατακλύζωσιν. Ib. lib. vi. p. 173.

ticular

ticular or partial deluges, yet it is ſuppoſed to have been grounded upon a notion, which generally prevailed among the antients, of the purging quality of the univerſal deluge; in memory of which *Grotius* ſuppoſes, that waſhing came to be ſo much uſed as a religious rite, among all antient nations: Whence that famed ſaying among the *Greeks* —

Θαλασσα κλυζει παντα τ' ανθρωπων κακα *.

Much virtue being aſcribed to ſea-water particularly, for its deterſive and ſanative qualities †.

Thus was the deluge, which ſwept away the inhabitants of the old world, looked upon by the wiſeſt of the antients of all denominations; as a purification of the new world; which emerged out of it in a renovated ſtate; and was a kind of a new creation; formed out of a ſecond chaotic maſs, compoſed of va-

* Grot. Annot. ad Matt. iii. 6.

† Vide Spencer, de Leg. Heb. lib. iii. Diſſert. iii. cap. ii. p. 692.

rious

rious conſtituent parts; in ſome ſort reſembling the antient chaos, out of which the world was created originally.

This was a melioration of the earth in many reſpects, attended with advantages, which the old world had not the benefit of; and which put the new one into a capacity, and diſpoſition, for farther improvements; as will be particularly ſeen, Ch. XI.

Theſe ſeveral great and important ends being anſwered by this extraordinary meaſure of deluging the world, are not only a ſufficient juſtification of the Divine conduct in that reſpect; but they alſo manifeſtly indicate the wiſdom and goodneſs, as well as juſtice, of it.

To which may be added, that this dreadful calamity being inflicted as the puniſhment of ſin, one other gracious intention of it appears to have been, that it might ſerve as a warning to all ſucceeding generations of the heinous nature of this, the greateſt of all evils — of God's ſevere indignation

dignation againſt it; and of the terrible judgment it had drawn down upon the guilty tranſgreſſors of his laws.

2. The next queſtion to be reſolved is, where ſuch a vaſt quantity of water could be found, as was ſufficient for the purpoſe of an univerſal deluge?

The quantity of water requiſite for drowning all the world appears ſo great and aſtoniſhing to ſome, that they think it quite incredible the deluge ſhould be univerſal; and therefore conclude, it was only a topical, or partial one. But as this notion is contrary to the expreſs declarations of ſcripture; ſo is it contrary to fact likewiſe; as it will appear hereafter, that there are manifeſt traces of the deluge in all parts of the earth ſtill remaining. I ſhall not therefore ſtay to refute this opinion.

Others, admitting the deluge to have been univerſal; but concluding, that the preſent quantity of water which ſurrounds the globe muſt have been inſufficient for the

the purpoſe of it; have racked their invention to find out ſuch a ſupply, as could make up the defect.

Mr. *Whiſton* hath fetched an immenſe ocean from the tail of a comet for this end; and ſome have had recourſe to a tranſmutation of elements for the ſame purpoſe. Dr. *Burnett* found water enough incloſed within the cruſt of the earth effectully to drown it: though Dr. *Keil* ſays, "The liquids are not the hundred thouſandth part of the ſolid bodies in the earth*:" And hath calculated, "That three and twenty oceans are the leaſt that can be neceſſary for an univerſal deluge†." Dr. *Woodward*, on the other hand, ſays, "That, upon a moderate eſtimate and calculation of the quantity of water, now actually contained in the abyſs, he found, that this alone was more than enough, if brought out upon the ſurface of the earth, to cover the whole globe, to the

* Exam. of Reflections, &c. p. 194.

† Remarks on Mr. *Whiſton's* Theory, p. 175.

height

height aſſigned by *Moſes* *." M. *Buffon* computes, "That, ſuppoſing the ocean to be of one depth, and to make no more than two hundred *toiſes* or fathoms, which is the tenth part of one league, there would be water enough to cover the globe, to the height of ſix hundred feet: And if this water were reduced into one maſs, it would make a globe of more than ſixty leagues in diameter †."

I ſhall leave all theſe diſcordant opinions, like *Cadmus's* armed men, to combat each other: And ſhall only obſerve in general, that there cannot be any certainty in any of them; as it is impoſſible to make calculations, with any tolerable exactneſs, in this caſe; unleſs the extent both of the land and water about the polar regions were better known, and the true depth of the water there, and elſewhere, about and within the earth, were known likewiſe; ſo that none of

* Natural Hiſtory of the Earth, part iii. p. 180.

† Theorie de la terre, Art. vi. p. 77.

theſe

theſe philoſophers had ſufficient *data* to go upon; whence their eſtimates are all no better than random gueſſes — all wide of the truth, and differing from it, as well as from each other.

The late Dr. *Long* endeavoured to reduce the proportions of land and water on the ſurface of the globe to the determination of fact. For this purpoſe, he covered an artificial globe with paper, fitting it to it, as cloſely as he could — then tracing the boundaries of land and water with a pencil upon it; and having done that, dividing both parts of the paper from each other, and weighing them in a pair of ſcales, he found the proportion of water to be two thirds, and that of the earth to be one third, of the terraqueous globe *.

But with regard to the preſent queſtion, even this experiment goes no farther than the ſurface; and there remains great uncertainty in that; as what is marked out

* Dr. *Long's* Aſtronomy.

on our globes for *terra incognita*, may, for aught any one knows, be moſtly water; and what is ſuppoſed to be water, may be land.

But now, leaving the uncertain opinions, and contradictory deductions, of men, let us ſee what can be learned from the word of God, which we profeſs to follow as our only guide. Here we are informed, that the waters covered the whole ſurface of the globe, at the deluge, fifteen cubits above the tops of the higheſt mountains. We find here likewiſe, that it covered the earth all over once before: Whence, at firſt ſight, one would apprehend there could be no difficulty in conceiving, that it might be brought to cover it, no leſs effectually, a ſecond time: As indeed there would be none, had the ſurface of the earth continued in the ſame, or nearly the ſame ſtate, as it was in at firſt. But when the waters were gathered together into one place, and the dry land appeared; the eminences and inequalities

qualities of its ſurface required a greater quantity of water to reach them; and when the mountains were raiſed, a greater ſtill was requiſite to over-top them. For, in proportion as the ſurface of the earth was raiſed in any of its parts, the *radius* of the circle from its centre would be lengthened; and its whole circumference would be ſo much enlarged; which would require ſo much the more water to cover it all round; beſides what muſt firſt go, to fill up all its hollows, and inequalities, up to the level of the mountain-tops; ſo as to reduce the whole terraqueous globe to an even, and ſmooth, and true ſpheroid; which the flood brought it to: A form, which it never obtained either before or ſince. Here therefore plainly ſeems to have been a deficiency of water to cauſe an univerſal deluge.

For the ſupplying of this, let it, firſt, only be recollected, that the waters were divided into two parts on the ſecond day of the creation; and were ſeparated from

each other by a partition which was placed between them; and that the part under the firmament was alone ſufficient to cover the ſurface of the earth, and actually did ſo, till the earth and water were ſeparated from each other, on the third day.

Here then was another body of water in reſerve, to be brought in aid of the former, for the purpoſe of the deluge; and which the hiſtory informs us was brought accordingly.

Calculations have been made of the quantity of water that ordinarily falls in rain; according to which, the rains could not afford half an ocean, which is thought to be but a very inconſiderable part of what was neceſſary to make a deluge *. But this, or even a much leſs quantity ſtill, added to the waters under the firmament, might make the *whole* ſufficient for the purpoſe: Though indeed it is as idle and fruitleſs to attempt calculating

* Univ. Hiſt. Vol. I. p. 209. 8vo.

the

the one body of waters, as the other, if not more ſo: For we cannot pretend to gage, or fathom either: Nor is there any arguing, from what ordinarily happens, to this, which was an extraordinary caſe; when the atmoſphere muſt have been ſurcharged with that element to a degree beyond what it hath been ever ſince.

From the ſcripture-account it ſhould ſeem, that theſe two bodies of water bore a near proportion to each other. For it gives us to underſtand, *That there was a firmament* in the *midſt* of the waters, *dividing*, equally as it were, *the waters from the waters*: And that this was the work of one whole day in the ſix. And at the deluge, *the cataracts of heaven*, as the LXX tranſlate, took up not leſs than forty days and nights in pouring down inceſſantly: Nor were the windows of heaven ſtopt, and the rain reſtrained till after a hundred and fifty days.

The immenſe quantities of water which fall in *ſpouts*, as they are called, and thunder ſhowers; in which the clouds do not break into drops, but fall in torrents, with ſuch violence, as in a few hours to lay large tracts of land under water, may give us ſome idea of that abundance of water, which muſt have been poured down upon the earth by forty days continuance of ſuch rain: And the vaſt inundations which are made every year in *Egypt*, only by the rains which fall in *Ethiopia*; and the like annual over-flowings of the great river *Oronoque* in *America*; whereby many iſlands and plains, at other times inhabited, are laid twenty feet under water, between *May* and *September*; may likewiſe help to convince us, that this contributary cauſe had no ſmall ſhare in deluging the earth.

Farther, From the fountains of the great deep being broken up, there are grounds to conclude, that there were large bodies of water ſhut up in different parts of the terraqueous globe, and kept in reſerve for the

the overflowing of it. And this is confirmed from ſome appearances in nature. Some well-atteſted circumſtances, which have attended particular inundations, not a century ago, may give us an imperfect idea of the emptying of ſubterraneous abyſſes at the deluge. An inundation happened in *Gaſcoyne*, in the year 1678, in which the water was obſerved to be ſpouted from the ſides of an adjacent mountain in innumerable jets; and in ſuch a manner, as diſtinguiſhed it from rain-water, by many infallible marks; which demonſtrated its having iſſued from the bowels of the earth *. In 1686, there was an inundation in *Yorkſhire*, in which a rock, as atteſted by ſeveral eye-witneſſes, viſibly opened; and water was thence thrown into the air, to the height of an ordinary church ſteeple †. That the bowels of the earth abound with water, appears from the following conſiderations:

* Phil. Tranſ. abridged, Vol. ii. p. 326.

† Ibid.. p. 328.

1. That, in mines and pits, the more one digs, the more water is met with.

2. That there are rivers ſwallowed by the earth; ſuch as *Guadalquiver* in *Spain*, and others, which guſh out of it again complete rivers.

3. That there are gulphs in diverſe parts of the ſea.

4. That there are lakes without bottoms, conſonant to what *Kircher* obſerves in his *Mundus ſubterraneus*, which diminiſh not at all; and yet receive little or no water from above. Such as are in the *Pyrenean* mountains, the lake of *Berwale*, of *Borboiau*, and *St. Pe*, and lake *Heſs* in *Scotland:* Which poſſibly may be ſome of the fountains of the deep, broken up at the deluge, and not yet cloſed.

And laſtly, becauſe there are found in caves vaſt ſubterraneous lakes; as among others, that in a cave near *Grenoble*, of which *Francis* the firſt had the curioſity of deſiring to know the extent, having cauſed

cauſed a boat to be made for that purpoſe *.

On the other hand, it is probable, that theſe unfathomable lakes go no deeper than the roots of the mountains; I mean the baſes, from which they were raiſed; whereby room was made for theſe waters: The bulk of the earth, from the bottoms of them to the centre, being, by the laws of gravity, all ſolid.

Beſides this, I apprehend, there are, both from ſcripture and nature, grounds to believe, that the antediluvian world greatly abounded in water, whatever is ſince become of it; and, whatever may be the caſe at this time, that the earth bore but a ſmall proportion to it; much ſmaller perhaps than it doth at preſent, and therefore might have been more eaſily overwhelmed by it.

This concluſion may, I think, be drawn from a paſſage in the ſecond epiſtle of *Peter* †; where the apoſtle writes, that our

* Phil. Tranſ. ib. 327.

† 2 Pet. iii. 5, 6, 7.

Saviour's

Saviour's coming, in a ſignal manner, to puniſh his enemies, and reward his faithful ſervants, having been foretold by himſelf, and other prophetical perſons, certain ſcoffers, not ſeeing any ſigns of this coming, began to deride the prophecy, and argued in oppoſition to it, that all things had gone on in one uniform and conſtant courſe, ever ſince the creation of the world; and therefore, they flattered themſelves, that the world would keep in the ſame ſettled courſe ſtill, without any ſuch remarkable change in the fortunes and ſtate of perſons and things, as Chriſt's coming was to be attended with.

Our apoſtle, to undeceive them in what they were wilfully ignorant of, informs them, that things were ſo far from continuing in the ſame invariable ſtate from the beginning of the creation, that they had undergone ſome very remarkable changes and revolutions—That the old world conſiſted of a very large proportion of water, by which it had been totally over-

overflowed: But that the preſent world was of a very different nature, ſo as not to be ſubject to any ſuch calamity: And that, on the contrary, it had ſuch principles of combuſtion in it, that it was decreed to be burnt with fire, for the perdition of ungodly men.

This, ſays he, *they willingly are ignorant of, that by the word of God the heavens were of old, and the earth, conſiſting of water, and by water.*

Whereby the world that then was, being overflowed with water, periſhed.

But the heavens and the earth, which are now, by the ſame word, are kept in ſtore, reſerved unto fire, againſt the day of judgment, and perdition of ungodly men.

On theſe words we may obſerve, firſt, That as the apoſtle knew, how little regard would be paid, by atheiſtical men, to divine predictions, promiſes, or threatnings, as ſuch; therefore he backs the word of God with arguments from facts, and the nature of things, which he grounds it

it upon, and which would be more likely to weigh with them; as this was, in effect, an appeal to their own reaſon, and ſenſes. Hence he informs them, contrary to what they affected ignorance of, that there had been a very extraordinary alteration in the world, when it was all drowned by the waters of the deluge; and that this deluge was cauſed by the proportionably large quantity of water, with which the antediluvian world abounded.

2. We may obſerve, That the Antediluvian world being diſtinguiſhed from the preſent, by the terms of, *ουρανοι εκ παλαι, the heavens of old*; and *ο τοτε κοσμος, the world that then was*—And the preſent world being contradiſtinguiſhed by the terms of, *οι νυν ουρανοι, και η γη—The heavens and the earth which are now*—This antitheſis confirms the ſuppoſition, that there was ſome very conſiderable difference between them, in their nature and conſtitution.

3. It

3. It is obſervable, that the heavens and earth of old, that is, the earth, with its ſurrounding atmoſphere, is characterized, as, ἐξ ὕδατος, καὶ δι' ὕδατος συνεστῶσα, *as conſiſting of water*, according to our marginal rendring, and ſubſiſting, as I render, *by water*. Its being ſaid to conſiſt of water implies, that this was its principal ingredient, with which it may be ſuppoſed to have greatly abounded; much water being contained in the great deep, which encompaſſed the dry land, and was interſperſed with it, covering the far greateſt part of its ſurface; much being incloſed in its bowels, and much likewiſe contained in the clouds, which filled the atmoſphere.

The earth likewiſe, as the text adds, ſubſiſted δι' ὕδατος, *by water*. Which it may be ſaid to have done in two reſpects.

1. It may be ſaid to have ſubſiſted by water, as its firſt principle, out of which it

it was formed *, agreeably to the hiſtory of the creation; as well as the opinion of the antient philoſophers, who believed water was the firſt principle of all things †.

2. The Antediluvian earth may be ſaid to have ſubſiſted by water, as by its ſuſtaining cauſe ‡, its ſupport and foundation; according to the ſcripture-philoſophy.

Thus ſaith the pſalmiſt. *The earth is the Lord's, and the fulneſs thereof; the world,*

* Συνιϛαται, το ὑπαρξιν εχον, και φυσιν, εις το ειναι. Και αλλως, συνιϛαλαι λεγεται, αντι τ ὑφιϛαται, και εν ὑπαρξει ϵϛι. Phavor.

† This was the philoſophy of *Thales*, *Zeno*, and many others of the antients. *Thales's* opinion is given in the very words of the apoſtle—Ex τ ὑδατ@-, φησι, συνιϛαναι παντα; which *Cicero* renders, *Ex aquâ, dixit, conſtare omnia.* And again, *Thales aquam eſſe dixit initium rerum.* *Cic.* de nat. deorum. See more authorities to this purpoſe in *Grot.* de verit. relig. chriſt. lib. i. ſect. 16.

‡ In this ſenſe St. *Jerom* and St. *Auſtin* render this paſſage. *Conſiſtens ex aquâ, de aquâ, et per aquam; tanquam per cauſam ſuſtinentem.*

and

and they that dwell therein. On a very juſt title—*He hath founded it upon the ſeas, and eſtabliſhed it upon the floods* *. And in another place, he calls upon us to give thanks to him, *who ſtretched out the earth above the water* *.

How the earth is ſupported by water, may perhaps in ſome meaſure be explained hereafter. In the mean time, we cannot help obſerving, that this muſt fill us with the moſt profound veneration of that power, which could raiſe a building ſo immenſe, and ſtrong, and permanent, as *not to be removed for ever*, upon ſo ſlippery and unſtable a foundation: And at the ſame time, it muſt give us a great idea of that prodigious collection of waters, which could be conſiderable enough for ſuch a mighty purpoſe. Hence likewiſe, we ſhall be the better able to conceive what the text proceeds to relate—Δι' ων, *By which* ſeveral bodies of water, ὁ τοτε κοσμος, *the*

* Pſ. xxiv. 1, 2.
† Pſ. cxxxvi. 6.

world that then was, was, in conſequence, *overflowed with water, and periſhed.* And thus was the element which conſtitutes and ſuſtains the world, in the hands of the Creator, made to deſtroy it.

4. We may obſerve, That no mention is made of water, in the deſcription of the preſent world: Whence may be inferred, that it doth not make ſo great an ingredient in the conſtitution of it, as it did in the former: But that, on the contrary, this earth is diſpoſed for the reception of fire, which at laſt will become the prevailing element.

Upon the whole, it appears, that the two worlds are plainly contraſted with each other by the apoſtle; and that there was much more water, and leſs dry land in the world before, than there hath been in it ſince the flood; whence an univerſal deluge might be more eaſily brought to paſs.

Probably leſs dry land might have been wanted, than hath been ſince. Mankind, being

being few in number for ſome ages, might not have had time to increaſe to that degree, as to ſpread over ſo large a ſurface of earth, as they occupy at this time. For though their increaſe before the flood was probably much more conſiderable, than it is at preſent, in order to ſtock the new world with inhabitants, and perhaps more ſo than it hath been ever ſince, unleſs we may except the firſt ages after the flood; yet it is not very probable, that they ſhould increaſe to that degree in the few ages of the old world's exiſtence, as to require ſo large a ſpace to dwell upon, and occupy, as they do at preſent.

I know Mr. *Whiſton* hath calculated, that the numbers of mankind before the deluge amounted to one hundred thouſand millions at leaſt; which is twenty times as many, as our preſent earth is ſuppoſed to contain; and conſiderably more than it is thought capable of ſuſtaining. But allowing, that the calculation is made upon right natural principles, by which it is

poſſible their numbers might have amounted to ſo much; yet here is no allowance for draw-backs: And great draw-backs there muſt have been, upon moral principles: As, firſt, on account of the rigour of the curſe, which rendered the earth unfruitful, and incapable of maintaining ſuch incredible numbers. From the ſame cauſe, and from the ſentence on the woman, there were probably great defects in fecundity *. *The earth* alſo *was cor-*

* The period of geſtation might not have been the ſame, in the old world, as in this; in which too it ſeems to have undergone ſome alterations. This period at preſent is nine months: Formerly it ſeems to have been ten, from the following authorities. *In my mother's womb was I faſhioned to be fleſh, in the time of ten months.* Wiſd. vii. 2. *Matri longa decem tulerunt faſtidia menſes.* Virg. Ecl. iv. And if I miſtake not, the laws of our land, in ſome caſes, admitt of a ſuppoſition of ten months; which they would not have done, without ſome foundation for it. Why, therefore, might not the period of geſtation in the antediluvian world have been longer ſtill? This, in courſe, would have made the increaſe of mankind ſlower; for which ſuppoſition we ſhall ſee ſome farther reaſon hereafter.

rupt:

*rupt**: And moral corruption of all kinds is known to debilitate, and to be pernicious to propagation. *The earth was* likewiſe *filled with violence*†: Whence mankind deſtroyed each other; early examples of which we have in *Cain*, and his deſcendant *Lamech*. And the ſtrict inhibition of blood, with the ſevere law of retaliation for murder, the only law immediately made after the flood, was undoubtedly occaſioned by the outrages committed by mankind againſt each other, before it happened. To this may be added, that from the bleſſing of fruitfulneſs, conferred upon *Noah* after the flood in ſuch ſtrong terms, it may probably be concluded, that the inhabitants of the old world had not multiplied ſo greatly; though God had likewiſe bleſſed them for that purpoſe. To the firſt pair God ſaid, *Be fruitful, and multiply, and replenish*

* Gen. vi. 11, 13.
† Ibid

*niſh the earth**. To *Noah* he repeated this bleſſing in the ſame words: And added a confirmation of it in ſtill ſtronger terms: *And you, be ye fruitful, and multiply, bring forth abundantly in the earth, and multiply therein*†—And how greatly mankind continued to increaſe, in conſequence hereof, for many generations after the flood, appears from a caſe, ſo low down, as that of the Iſraelites; who, from 70 males‡ increaſed in 430 years, to the number of 600,000 men, beſides children‖; and that in three generations. For *Moſes* was the ſon of *Amram*, the ſon of *Kohath*, the ſon of *Levi*. A remarkable inſtance of the great increaſe that mankind is capable of.

To return, If we take the foregoing draw-backs into the account, they will

* Gen. i. 28.
† Ch. ix. 1. 7.
‡ Gen. xlvi. 29. Exod. i. 5.
‖ Exod. xii. 37.

appear

appear to weigh not a little in the ſcale, againſt the advantage of longevity in the antediluvian world, and will reduce the period of doubling much nearer to what it is at preſent; than Mr. *Whiſton's* calculation makes it to be*. Whence we will ſee reaſon to inferr, that the inhabitants of the old world were not nearly ſo numerous, as they might otherwiſe be thought to have been. Therefore, to bring this argument to a concluſion, they did not require ſo large a ſpace of earth to live and ſubſiſt upon, as, on ſuch a ſuppoſition, it might be thought they would. Nothing therefore hinders from what we

* It hath been obſerved, that, in order to preſerve a proper balance, and due proportion, in the animal creation, to the ſufficiency of the world for the maintenance of them, and to their uſe in it; the increaſe of long-lived creatures is ſlow and ſmall; and that of the ſhort-lived ones great, and more numerous. *Derham's* Phyſico Theology, ch. x. Why therefore might not a like rule have been eſtabliſhed in proportioning the increaſe of mankind, in all ages, to their exiſtence, and duration in life?

have ſeen, but that there might have been a greater proportion of water, and leſs land, in the old world, than there is at preſent in this, as hath been made to appear from St. *Peter:* And this rendered it to be the more eaſily overflowed by the waters of the deluge.

What contributed to make it ſtill more ſo, was the ſite and diſpoſition of land and water, both in themſelves, and reſpectively towards each other. We may recollect an argument was offered *, to ſhew, that the dry land occupied the central, or equatorial parts of the globe; and that the remainder of it, on each ſide, quite to the poles, was covered by water. Hence we may figure to ourſelves, that the dry land formed a kind of zone †,

* Ch. I. p. 27.

† *Saturn's* ring exhibits an appearance, not unlike the ring, or zone, here ſuppoſed to have been, in the terraqueous globe: Only with this difference, that *Saturn's* ring is detached from the body of the planet; and that the ring, or zone, of our antediluvian world, made a part of it; or rather conſtituted all its earthy part.

encom-

encompaſſing the globe, of a breadth, which we may ſuppoſe extended to between 30 and 40 degrees of north and ſouth latitude, more or leſs; according to the wavings and diverſities, in the limits of land and water; occaſioned by the inequalities of ſurface that were in the primitive earth; whereby the water would, in the depreſſed places, encroach upon the land; and the land, where raiſed, would gain upon the water, and make promontories running out into the ſea. And though the main bodies of land and water would be thus ſeparated from each other; yet they would not be ſo entirely diſunited, but that the land would be ſubject to ſtill farther encroachments, from the contrary element. For there muſt have been many large bodies of inland water collected in the depreſſed parts of the earth, from its firſt formation; and much larger ſtill muſt have ruſhed in, from the main oceans, through the chaſms and openings, which were made, by the rai-

ſing of the mountains. Theſe would ſpread themſelves into wide ſeas, through all parts of the dry land, and cover many extenſive tracts of it; in the ſame manner as we ſee at preſent: So that, upon the whole, there might not have been one third, perhaps not much above one fourth, of the terraqueous globe, which might be called *terra firma*.

It is true, the diſpoſition of land and water in general is at preſent very different from what it is here ſuppoſed to have been in the Antediluvian world. This will be accounted for hereafter. However, it may not be amiſs to take a comparative view of the terraqueous globe in this reſpect; eſpecially of the polar regions, where the greateſt bodies of water were ſuppoſed to have been originally lodged; and where it was ſuppoſed there was little or no land—To ſee what appearance there is at preſent of any ſuch original diſpoſition of the two elements —What the preſent ſtate of thoſe parts

is,

is, from what diſcoveries have been made; though theſe regions, eſpecially the parts encompaſſing the South-pole, are the moſt unknown of all others—How far, notwithſtanding, the land is known to extend—What ſeas have been ſailed into—And what probable conjectures may be made concerning parts undiſcovered. It is hoped greater diſcoveries will ſoon be made in the ſtate of both the polar regions by thoſe adventurers for knowledge, who have ſeverally embarked in this laudable undertaking.

Firſt, with regard to the northern parts; *Monſon*, an Engliſhman, in ſearch of a north paſſage to *China*, ſailed directly for the pole, and got within two degrees of it; where he found a high ſea, without any ice; a proof, that there was no land near; it having been obſerved, that it never freezes, but on or near to the coaſts. An *Hollander* relates, that he had ſailed cloſe up to the pole; and found it as warm as at *Amſterdam*. Many others have gone as far

far as 89 degrees of north latitude; where they found no ice; but a free, open ſea, and very deep, like that of the bay of *Biſcay* *. According to all accounts, there are very extenſive and high ſeas, in the parts about the North-pole: Whence voyagers have ſo often attempted to find North-eaſt and North-weſt paſſages to *China*; under a perſuaſion of there being ſuch, though none have as yet been fortunate enough to find either the one, or the other.

In the ſouthern hemiſphere, the two great continents of *Africa* and *South-America* run into narrow points, and are ſurrounded with ſuch great oceans, as reduce them to mere peninſulas. The Cape of *Good Hope* reaches no farther than 34 degrees, ſouth latitude: And Cape *Horn* ſcarce exceeds 56 degrees; beyond which no land of any account hath been diſcovered. Cape *Circumciſion* is about the ſame latitude with Cape *Horn*. *Drake's*

* M. *Buffon*, p. 78, 79. 134, 135.

land

land is in latitude 65: And ſome *Dutch* ſailors report, they ſaw mountains covered with ſnow in latitude 64: which might have been mountains of ice, for aught they knew; though that was a ſign of land being near, as above obſerved.

The ſea, according to all appearance, is in poſſeſſion of the remaining ſpace all around, as far as the South-pole: And poſſeſſion is a preſumption of right, as the lawyers argue: And the argument holds in this caſe, till ſuch time as land is certainly diſcovered in thoſe parts: Nor ſhould there be a contrary preſumption, without any ſuch diſcovery; whatever ſome have imagined, or conjectured *.

Be that however as it may: To come to a concluſion of this argument. There can certainly no eſtimate be made of the

* M. *Buffon* eſtimates the unknown parts about the South-pole at one fourth of the whole globe; and ſuppoſes there may be a continent in thoſe parts as large as *Europe*, *Aſia*, and *Africa*, taken all together; and yet that there is more water than land in thoſe parts. P. 77.

quantity

quantity of water which was in the Antediluvian world; any more than of the diſpoſal of it, nor of its ſufficiency to drown it; from the preſent ſtate of the globe; nor from the quantity of water which ſurrounds it; could it be aſcertained: Becauſe it will be made to appear hereafter, that great alterations have happened in theſe reſpects — That the element of water hath been decreaſing various ways — And that the matter of the earthy part, and bulk of the earth, hath been continually increaſing ever ſince the flood: So that, allowing there is not a ſufficiency of water, in, and about, the earth, to overflow it at preſent; it doth by no means follow, that there was not a ſufficiency of it for that purpoſe, at the time, when we are informed that this event was brought to paſs.

But ſuppoſing the quantity of water to be as great as can in reaſon be deſired, for the purpoſe; yet it may be aſked, By what means — by what contrivance, or

power.

power in nature, could it be brought to riſe ſo far above its ordinary level, as to cover the whole face of the earth? So that none of thoſe long chains of high mountains, which extended acroſs the globe; ſome from North to South*; others from Eaſt to Weſt†; and others again

* The mountains both in South and North *America* generally run in this direction. There is one continued range of them, which runs from the ſtreights of *Magellan* to the gulph of *Darien*, and which meaſures between 60 and 70 degrees of latitude; according to M. *Buffon*, much more; who extends them as far as New *Granada*; making in the whole 1700 leagues, or about 85 degrees. And if to theſe are added the *Apalachean* mountains, and others following the ſame direction in *North America*; the line will be extended much farther.

† That long chain of mountains, which reaches quite from *Galicia* in *Spain*, through *Europe* and *Aſia*, as far as the Eaſtern parts of *China*; and comprehends the *Pyrenees*, and the *Alps*; then extends through *Germany*, *Dalmatia*, *Macedon*; and from thence joins the mountains of *Armenia*, *Caucaſus*, *Taurus*, *Imaus*; and at laſt ſtretches itſelf as far as the ſea of *Tartary*; thus traverſing both the continents of *Europe* and *Aſia* from ſea to ſea; contains little leſs than 120 degrees of longitude.

in

in all kinds of direction — That none of theſe were ſufficient to form a barrier againſt the inundation; or to put the leaſt ſtop to it; but that it raged and ſwole to ſuch an immenſe height, as to ſurmount them all?

This was the third queſtion to be reſolved. I do not know of any attempt that hath been made, which might be called a reſolution of it, that carries any appearance of probability; but that of Dr. *Halley's*: who ſuppoſes, that the waters of the ocean might have been brought to overflow the earth, by an alteration of the centre of its gravity.

I preſume it will be, and I think it hath been generally granted, that ſuch an act of Divine power, if exerted to a proper degree, would make ſo great an alteration in the poſition of the earth, as would undoubtedly ſubject it to be overflown by the waters of the ocean.

I ſhall therefore adopt this principle; but ſhall beg leave to apply it in a different manner.

In

In order to this, we muſt again recollect what was laid down in the firſt chapter, and repeated in this; that when the earth's revolution on its axis was impreſſed upon it, the ſolid particles of the chaos got poſſeſſion of the middle part of the globe, and occupied as much of it, on each ſide the equator, as their bulk required; and that the fluid parts, being of a looſe and more yielding texture, were, by that means, forced to give way; and to recede, on each ſide, towards the poles; about which the main bodies of them were collected; occupying that ſpace on the ſurface of the globe, which was left by the ſolid parts; to the extent of between 50 and 60 degrees; it having been ſuppoſed above, that between 30 and 40 degrees from the line on each ſide was chiefly land.

This being premiſed, I muſt beg leave to propoſe a *poſtulatum*; which perhaps may be looked upon as a bold one. But it is not new, being none other than what many, both antients and moderns, have

have ſuppoſed, without ſupporting it with any good reaſon. It now carries its reaſon with it.

The poſtulate is this, *That the poles of the earth, by its original poſition, were erect, and ſtood at right angles with the plane of the equator; from which there was no deviation of the ecliptic, both coinciding—That the centre of the earth was the centre of gravity—And that it continued in this ſtate and poſition till the deluge. But then, that the centre of gravity was removed 23½ degrees nearer to one of the poles; which was productive of a correſpondent inclination of both the one, and the other, of the poles themſelves.*

The neceſſary and obvious conſequence of this inclination would be, the deluging of the world. For as the main body of the element of water was lodged at and about the poles; when this inclination was given them by the alteration of the centre of gravity, the water was diſcharged from them all over the face of the globe:

globe: Like a veſſel full of water, and open at top; which being tilted or ſtooped, its contents flow out of courſe. An alteration of the centre of gravity, and an inclination of the poles, would inſeparably go together, and be mutually productive of each other. A removal of the centre of gravity would infallibly cauſe a correſpondent inclination of the poles: Or if an outward force ſhould be impreſſed upon the poles, ſo as to cauſe an inclination of them, the centre of gravity would change its place, and follow of courſe. And the one pole being inclined one way, the other muſt have had the contrary inclination: Whereby the water of the one overflowed the one hemiſphere, from north to ſouth ſuppoſe; and that of the other pole, at the ſame time, ſpread over the other hemiſphere, from ſouth to north: Its gravity retaining it from falling off from the ſurface of the earth.

The waters contained in theſe receptacles, I apprehend, were principally *the*

fountains of the great deep, which were *broken up* by this means*. Whatever other bodies of water were contained in the inland and open ſeas, and likewiſe in ſubterraneous caverns †; theſe too were all undoubtedly emptied and poured out upon the earth at the ſame time.

Nor was this all: That great alteration in the poſition of the earth, whereby it was made to topple and reel in this manner, muſt naturally have cauſed great commotions in the air and atmoſphere; and be attended with ſuch a jarring of the elements, as would not be appeaſed in any ſhort ſpace of time. The conſequence of which would be great and inceſſant falls of rain, beyond what can be conceived to proceed from any other cauſe whatſoever.

Hence therefore we are informed, that *the windows of heaven were opened* at this

* Gen. vii. 11.

† See above, p. 198.

time

time likewiſe, and diſcharged the waters which were above the firmament.

All theſe ſeveral collections of water being thus brought together, concurred in producing the great effect aſcribed to them: Which, I think, it muſt be allowed, they were adequate to, and might be productive of.

We are told, That *the flood was upon the earth forty days* *: It was ſo many days in ſpreading over it, and in riſing to its greateſt height, which it did gradually, the waters prevailing מאד מאד †, *more and more*; for that is the literal tranſlation, till at length all the high hills were covered by them, to the height they are ſaid to have reached. They then continued at that height an hundred and fifty days ‡, when they began to abate. The abatement is deſcribed to have been as gradual,

* Gen. vii. 12. 17.
† Ver. 19.
‡ Ver. 24.

as the increaſe. The deluge was ſix months and ten days in the whole, in riſing to, and continuing at, its higheſt pitch. It took up ſix months more in going off entirely *.

As the coming on of the flood is thus accounted for; it may be expected, that its going off ſhould be accounted for likewiſe; and that it ſhould be ſhewn, whither the waters of it retired, and what receptacles they found. They could not return to the places from whence they came: They could not run backwards up to their fountain-heads. There was indeed no need of it.

They had only to proceed forward in their natural courſe: The waters of the north pole moving on to the ſouth, and thoſe of the ſouth towards the north pole; which they would find empty, and ready for their reception reſpectively. By this means they would only change places,

* Gen. viii. 1—4.

and reciprocally occupy the receptacles of each other.

Thus is the receſs of the deluge eaſily accounted for: And in this manner were the waters of it probably in a great meaſure diſpoſed of. When they had diſcharged the office aſſigned them, they were detached to repleniſh the two principal fountains of the great deep, out of which they had iſſued. Large quantities of them notwithſtanding remained behind.

This muſt neceſſarily have been the caſe: For we muſt recollect, that the earth had many eminences and cavities in it; that the general frame of it had ſome time after its firſt formation, undergone conſiderable alterations by the elevation of the mountains. And conſequently, that larger and ſtill deeper chanels and cavities had been made between them. When therefore the earth was deluged, all theſe vaſt chaſms, as well as thoſe original leſſer hollows, muſt have been firſt filled up: Some of which perhaps having

ing no communication with other ſeas, had little or no water in them before. And where there were not ſufficient outlets for the waters now; there they would of courſe remain and ſettle.

That this was the caſe, appears from the preſent ſtate of the terraqueous globe. It is ſurrounded with large ſeas and oceans, which fill up theſe immenſe cavities; the moſt conſiderable of which are, The great Southern ocean; the *Atlantic* ocean; and the great Pacific ocean. The Southern ocean may be ſuppoſed to contain moſt part of the water, which had been diſcharged from the north pole: And the other two great oceans may be ſuppoſed to contain the overplus of the water, the one of the one pole; and the other that of the other pole. By this means likewiſe, there were ſuch conſiderable bodies of water thus, as it were, pounded up, in the central and other parts of the world, and arreſted from reaching either pole,

pole, to which they originally had belonged.

And that the waters of the ſea were impounded in this manner, about the middle parts of the earth, is confirmed from obſervation; that, as the greateſt inequalities of the globe in general are found in the equatorial climates, where the mountains and the earth are higheſt; ſo likewiſe, that the higheſt and deepeſt ſeas are nearer to the equator than to the poles. Hence, as there were ſuch great quantities of water drained from both the poles, which never were replaced in either; there would of courſe be, and probably there was, much more land left uncovered, in the neighbourhood of both the poles, and to a conſiderable diſtance from them, than it may be preſumed there was before the flood. On the other hand, it is not improbable, that there were large tracts of land in other parts covered by the waters of the deluge, which never emerged. *Plato* mentions the drowning of the iſland

Atlantis; which he makes of larger extent, than *Asia*, and *Africa*, both together *. I do not know what better account can be given of such an event; but that there might be a tradition of a large continent having been absorbed, in the time of the deluge, by the *Atlantic* ocean, hence so called, and never seen afterwards. It is observed, there are but few islands in the northern seas, in comparison with those in the torrid zone; where their number is very great †. These may be the summits of mountains, or high lands; which were more frequent and higher in these parts, and which were once all dry, and joined to the neighbouring continents; there being few islands known far distant from any main land.

It is possible our own island was formed by this means, having been rent from the continent, by the same earthquake,

* *Plato* in Timæo, et in Crit.

† M. *Buffon*, p. 34.

which

which caſt up the mountains in general; and having been left in the manner it appears by the waters of the deluge, when they ſubſided. The chanels which run on each ſide of it, correſpond with that long ridge of mountains, which extend in continuance from the *Moorlands* of *Staffordſhire*, to the extremity of the highlands of *Scotland*.

The ſame correſpondence may be obſerved between the diſpoſition of the mountains and ſeas in general.

This ſeems to be moſt remarkable with regard to the great continent of *America*, and the oceans which environ it. This continent chiefly conſiſts of vaſt chains of mountains, the largeſt and higheſt in the whole world, which run north and ſouth throughout its whole extent, with the lands ſloping from them, on each ſide, down to the great oceans; which are proportionably wide and deep, running on each ſide of the main land likewiſe from the one end to the other—The whole exhibits ſuch

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an aſpect, as if this great continent, thus ridged up, had been, as it were, dug up out of theſe huge correſpondent gulphs; which, when the waters of the deluge were let into them, were filled up *.

To conclude this account of the receſs of the deluge, we are informed, That *God made a wind to paſs over the earth* †, for this purpoſe of abating the waters of it. This wind helped to dry them up, and to raiſe the vapours exhaled by the ſun. It might at the ſame time act in aid of the two great currents; and blowing towards the ſouth, would drive the waters ſouthward; as it would, by blowing, on the oppoſite ſide of the globe,

* To theſe chanels, which were thus ſunk by the caſting up of the mountains out of them, may *Job* poſſibly allude, when he introduces the Almighty, as ſaying, that he *brake* for the ſea *his decreed place*. He beforehand brake open the chanels of the ocean; and furrowed them, as with a plow: And the ridges which were raiſed, by one and the ſame operation, ſerved for *bars and doors* upon it. Job xxxviii. 10.

† Gen. viii. 1.

north-

northward, quicken the motion of the waters, that ran that way, in their progreſs towards the place aſſigned for them. And by theſe ſeveral means *the waters were aſſuaged.*

Thus, I hope, the acceſs and receſs of the univerſal deluge are both ſatisfactorily accounted for.

In this manner were the *depths broken* up by the knowledge of him, who *founded* the *earth in wiſdom* *: And were *ſent out to overturn it* †. And thus, having executed their commiſſion, were the *waters of* the ſea again *gathered* together, as *an heap*; and the *depth* was laid up *in ſtore-houſes* ‡—In thoſe ſtore-houſes, where its waters had been depoſited, at their firſt ſeparation from the dry land; and *ſhut up with doors, in its decreed place*; till the time appointed for its breaking forth from

* Prov. iii. 19, 20.
† Job xii. 15.
‡ Pſ. xxxiii. 7.

the

the abyſs, *as if it had iſſued out of the womb**. When *deep called unto deep by the noiſe* of their cataracts†. That is, the abyſs of north and ſouth; which by their *ruſhing forth from their priſons*, muſt have been tumultuous and loud to a great degree.

This account explains thoſe paſſages in the Pſalms abovementioned; in which it is ſaid, that *the earth is ſtretched out above the waters*; and that *it is founded upon the ſeas, and prepared upon the floods*: For hence we ſee that the earth actually hath no other foundation than water; both the poles, that is, both ends of its axis, reſting abſolutely upon water; as doth indeed the whole bulk of the earth, in a great meaſure, upon thoſe immenſe oceans, which gird it, *as with a ſwaddling-band*, and encompaſs it on every ſide. As this is wonderful in itſelf, ſo is this deſcription admirably adapted to it: And at the ſame time, it confirms this account of the diſpoſition of the land and

* Job xxxviii. 8, 10. with chald. paraph. in loc.

† Pſ. xlii. 7. according to LXX. which ſo tranſlates, water,

water. It likewiſe in effect agrees with the words of another inſpired writer: *He ſtretcheth out the north*, the northern regions, *over the empty place, and hangeth the earth upon nothing* *: Or, as the Chaldee paraphraſt renders, upon the waters, nothing ſuſtaining it †. The waters indeed are as nothing for a ſupport of themſelves? For by whom are they ſupported, but by him, who ſuſtaineth all things by the word of his power?

The learned reader knows, that the notion here advanced concerning an alteration in the poſition of the earth is neither ſingular, nor new. Dr. *Burnett* collected many authorities from the *Greek* philoſophers in ſupport of this opinion. *Diogenes*, *Anaxagoras*, *Empedocles*, *Leucippus*, *Democritus*, and *Plato*, appear to have eſpouſed it. Their teſtimonies are preſerved by *Diogenes Laertius*, and *Plutarch*; which latter hath

* Job xxvi. 7. † Qui extendit aquilonem ſuper nihilum; ſublevat terram ſuper aquas, nullo eam ſuſtinente. Paraph. Chald.

one

one whole chapter, in his work, De placit. phil. cap. iii. the title of which is, Περι εκκλισεως γης*.

This notion, moſt probably, was traditionary, having deſcended, among many other traditions and doctrines, from *Noah* and his family; and preſerved by the eaſtern ſages; from whom the *Greeks* drew all their knowledge: And the confuſed manner in which theſe philoſophers expreſs themſelves; and their poor attempts to account for this change, ſavour more of the obſcurity of tradition, than of the accuracy of aſtronomical ſcience, or obſervation; which indeed in thoſe ages had not arrived at any great degree of proficiency.

* Theſe are ſome of the paſſages:

Διογενης και Αναξαγορας μετα το συσηναι, τον κοσμον, και τα ζωα εκ της γης εξαγκασειν, εκκλιθηναι πως τον κοσμον εκ τε αυτοματε εις το μεσημβρινον αυτε μερος.

Εμπεδοκλης — εγκλιθηναι τας αρκτους, και τα μεν βορεια ὑψωθηναι, τα δε νοτια ταπεινωθηναι, καθ' ὁ και τον ὁλον κοσμον.

Λευκιππος παρεκπεσειν την γην εις τα μεσημβρινα μερη.

Dr.

Dr. *Burnett* and Mr. *Whiſton* after him, both eſpouſed this notion of the poles of the earth having been originally erect, and perpendicular to the plane of the equator; But they differ in the time, when they ſuppoſe their preſent inclination was given them; according as it ſuited their different hypotheſes. Dr. *Burnett* ſuppoſes this happened at the deluge: But Mr. *Whiſton* will have it to have been at the fall. I agree with Dr. *Burnett*; for the reaſon above aſſigned, from its inſtrumentality for drowning the world.

That there is ſome foundation in nature for a preſumptive argument in favour of this hypotheſis, that the poſition of the earth was once ſuch as is here contended for, may be inferred from the obſervations of aſtronomers, concerning the obliquity of the ecliptic, that it hath not been always the ſame; but that there is a variation in it, in ſuch a manner, that it hath been continually *diminiſhing*; and that at the rate of *forty-ſeven ſeconds*, which is near half a minute, in a hundred years: So that, according

according to this account, the *ecliptic*, in proceſs of time, will coincide with the *equator*; as, according to this ſuppoſition, it did before.

This appearance ſeems to indicate, that the preſent poſition of the earth is not natural to it, nor original—that there is a reſiſtence in nature againſt it; and an endeavour to recover its original ſtate, in this reſpect; as poſſibly it may do in every other.

It may be alledged, that the ſhock of ſuch a great inclination, as is ſuppoſed to have been at this time given to the earth, muſt have been fatal to the ark; which otherwiſe would be under difficulties enough to weather the commotions of the deluge. But we ſhall find, upon conſideration, that the ark would be but little, if at all, affected by this motion of the earth; which muſt have been given it, when the ark was yet upon dry land; and previouſly to the flood, which was in conſequence of the motion. For whether the impreſſion

was

was made inſtantaneouſly, or by gentle degrees, as is moſt probable; the waters muſt have taken ſome time in approaching the place where the ark was built; as the riſe of them is deſcribed to have been gradual: And by this means, the operation of the preſſure on the earth would have been far advanced, if not quite over, before the ark would have been ſet afloat; or perhaps before it ſtirred.

It is ſaid, that *it came to paſs after ſeven days, that the waters* of *the flood were upon the earth**. But why after ſeven days? Why is any preciſe time mentioned? Poſſibly becauſe the deluge would be ſo long in making its progreſs, till it arrived at the place of the ark; from the time, that it began to be poured out upon the earth, by the firſt degree of preſſure, that was made to ſtoop, or incline it.

It is even poſſible, this motion would not have been at all perceived, any more

* Gen. vii. 10.

than that of the earth's diurnal and annual revolutions.

It may not be amiſs to add, with regard to the tempeſtuouſneſs of the deluge, that the ark was ſo contrived, as to live in it, and ride it out, however tempeſtuous it might have been. This hath been demonſtrated in fact from the form of it, which was that of an oblong ſquare; the length of which was *ſextuple* the breadth; and *decuple* to the height of it; which, being lighter than the water, would always be ſupported by it. This likewiſe was proved to be the moſt commodious form it could have, for this and all its other purpoſes. *Peter Janſen*, a *Dutch* merchant, about the beginning of the laſt century, built a veſſel, anſwering, in all its proportions, to that of *Noah's* ark; the length of it being 120 feet, the breadth 20, and the depth of it 12. The man, and his ſhip, while it was building, were made the ſport of the ſeamen, as much as *Noah*, and his ark, probably were: But afterwards it was found,

found, that ſhips built in this faſhion were, in the time of peace, beyond all other, moſt commodious for commerce; becauſe they would hold a third part more, without requiring any more hands, and were found far better runners than any others *.

To conclude this chapter: If, upon the whole, this ſeems a rational account of the univerſal deluge, it may help to confirm and facilitate the belief of the *Moſaical* account of this great event; to remove all ſcruples about it; and to ſilence the objections of unbelievers. On the other hand, Let us ever bear in mind, that natural means, and what are called ſecond cauſes, are but inſtruments in the hands of the great Creator and Governor of the univerſe, who *doeth all things by the word of his power*; and into whoſe act this wonderful miracle muſt finally be reſolved.

* Bibliotheca Biblica. And Stackhouſe's Hiſt. of the Bible, Vol. I. p. 123.

CHAP. VI.

Of the appointment of the seasons, consequent upon the Deluge.

THE deſign of this, and the following chapter, is to conſider ſome particulars conſequent upon the deluge, which are matter of pure revelation, that otherwiſe we could have no knowledge, or idea of: But which, when conſidered, may tend to confirm and illuſtrate what hath been advanced in the foregoing chapter.

And firſt, in this chapter, of the appointment of the ſeaſons, recorded in Gen. viii. 22.

God,

God, having ſatisfied his juſtice, and fulfilled the ends of his wiſdom, in the puniſhment and deſtruction of the old world, diſcovered early marks of his grace and favour to the new, and to the ſurviving perſons, whom he had ſaved to repleniſh it with inhabitants.

Noah's firſt care was, in a deep ſenſe of the mercy of his deliverance, to expreſs the gratitude of his heart, by building an altar, and offering burnt ſacrifices upon it; which were propitiatory on the one hand, as well as euchariſtical on the other. And this act of religious homage proved to be highly acceptable to God. The odour of the offerings was grateful to him, and he *ſmelled a ſweet ſavour* from them: And in farther token of his kindneſs and benignity, he made the following moſt merciful and gracious determination —*The Lord ſaid in his heart, I will not again curſe the ground any more for man's ſake; though the imagination of man's heart is evil from his youth: Neither will I again*

*ſmite any more every thing living, as I have done**.

Some have thought, that they ſaw here a final end of the curſe on the ground; which having ſubſiſted in its full rigour, during the continuance of the old world, had its period with it, and was finiſhed with the flood †. But I cannot find any warrant for ſuch an interpretation, which is contrary likewiſe to fact and experience; from which we may be ſufficiently convinced, that the curſe hath not entirely ceaſed, as yet.

What ſeems to be the meaning of the words, is, that God would on no account revive or renew the curſe in its former ſeverity, be the provocations of men ever ſo great, as he foreſaw they would be; notwithſtanding the warning they had from the late dreadful judgment, which he had inflicted upon a world of ſinners: But

* Gen. viii. 21.

† Bp. Sherlock on Prophecy, Diſc. iv.

that

that he would from hence forward ſuffer the curſe to wear away by degrees: Much leſs would he deſtroy every thing living again, in the manner he had now done *.

As a yet farther mark of his gracious and favourable intentions, he adds—*While the earth remaineth, ſeed-time and harveſt, and cold and heat, and ſummer and winter, and day and night ſhall not ceaſe* †.

As the inclination, which had been given to the earth, from its former poſition, at the flood, if not then felt, would not fail, in its future conſequences, to be obſerved by *Noah*; and probably would be apprehended by him to be productive of ſome yet farther bad effects: To remove his fears, God aſſures him, that this alteration would be no ways detrimental; ſo far otherwiſe, that it would indeed be greatly advantageous—That from henceforward, the year would be divided into

* See Eſſay on Redemption, ch. iv. p. 68.
† Gen. viii. 22.

more diſtinct, and certain periods; which would be marked with ſo many different ſeaſons; of which there would be a regular ſucceſſion, attended with a grateful viciſſitude: A proviſion and proceſs wiſely adapted to all the different purpoſes of human life; And quite of another nature from that which men in the old world had been accuſtomed to. For if they had never been under any other conſtitution of nature than the preſent; if there had been no alteration in this reſpect, but *all things had continued as they were from the beginning of the creation*; what occaſion had there been for taking any notice of what had nothing uncommon, or remarkable in it? Hence therefore, I think, it may be fairly inferred, that this regular alternation of ſeaſons was a new grant, which they had not enjoyed before the flood; and that it was made for the encouragement of induſtry, in the cultivation of the earth, now that it was reſtored

reſtored to a proper condition for that purpoſe.

Accordingly we read, that immediately upon this, *Noah began to be an huſbandman*; *and* that *he planted a vineyard* *.

The commentators indeed interpret the promiſe of regular ſeaſons, as referring only to the flood, which had interrupted and confounded them; and to their being now reſtored to their uſual courſe. But a promiſe had been made juſt before of ſecurity to mens lives from any the like deſtructive calamity: This concerned only the mode and condition of life, which had but little relation to the flood. A promiſe which had been made of an alleviation of the curſe; to which nothing perhaps hath contributed more, than a diſtribution of the year into regular ſeaſons; as will appear more fully hereafter. The aſſurance of a perpetuity of this grant, to continue without ceaſing or interruption by a deluge, or otherwiſe, as long as the earth re-

* Gen. ix. 20.

mained — This certainly referred to the flood; and likewiſe to the ſtate before it; as it implied, that a final end had been put to that ſtate, or conſtitution of the world, by the flood.

In this view of the matter, therefore, we perceive a ſingular propriety in the promiſe of regular ſeaſons, beyond what appears in any other. It is well known, that if the earth always maintained the ſame poſition towards the ſun, and conſtantly kept the ſame track throughout the year, always moving in the line of the equator, there would be no variety of ſeaſons; no ſeed time, or harveſt, peculiar to one part of the year more than another; no cold, or heat; ſummer, or winter, more in one period than in another; nor any difference in the length of days and nights: But one perpetual tenour, and temperature of air and weather throughout the whole year; the days and nights likewiſe would be equally divided, always conſiſting of twelve hours each; there would be a perpetual equinox.

equinox. Nor would there be any change, with regard to heat and cold, ſummer and winter; or in any other reſpect; but what would reſult from ſome other cauſes and circumſtances. A difference of climates there would be, in all degrees between extreme heat, and extreme cold: But no difference of any kind in one and the ſame climate from this cauſe.

It is well known likewiſe, that the preſent variation in the ſeaſons is chiefly, and in the length of days and nights is ſolely, owing to the ſun's acceſs to, or receſs from the tropics; or, to ſpeak more properly, to the earth's moving in this manner, and perpetually ſhifting and veering to and from, the equator, ſometimes on one ſide of it, ſometimes on the other: And by this means only could the ſun make that diverſity of ſeaſons, aſcribed to it in the firſt chapter: But which did not take place till the times we are now conſidering. If therefore there ever was a time when there was no ſuch diverſity, this cannot well be conceived to have

have proceeded from any other natural cauſe than that which hath been ſuggeſted; that is, from the axis of the earth being then at right angles with the plane of the equator.

But I do not expect it will be ſo eaſily granted, that there was no variety of ſeaſons in the antediluvian world: For is it not ſaid, that at the creation, God appointed lights, to divide the day from the night; and to be for ſigns, and for *ſeaſons*, and for days and years *? It is true, the great luminaries anſwer all theſe important purpoſes: But the queſtion is, in what ſenſe the word, here rendered *ſeaſons*, is to be underſtood.

In the original, the word is, מועדים; and is derived from the root יעד, which ſignifies *to conſtitute*, or *appoint*. Accordingly מועדים, in the proper ſenſe of the word, ſignifies *ſtated*, or *conſtituted times*, ſet apart by publick authority, or

* Gen. i. 14. See Dr. Woodward's Nat. Hiſtory, part vi. p. 302.

common

common conſent, for the obſervation of certain civil, or religious rites, or ſolemnities: Not natural ſeaſons of the year, the returns of which are periodical, without any ſuch appointment; and which are at preſent under conſideration. Thus we read in the law, *Theſe are the feaſts of the Lord, which ye ſhall proclaim in their ſeaſons* *. Where both the *feaſts*, and the *ſeaſons*, are expreſſed by the ſame word, מועדי: And thus in the Pſalms; *He hath appointed the moon for certain ſeaſons* †: That is, for ſome ſtated times of the former ſort, the returns of which depend upon the moon: But the moon hath no influence upon the natural ſeaſons of the year: And I very ſeldom meet with this word in this latter ſenſe. It is generally and moſt properly expreſſed by another word עת; which ſignifies ſea-

* Lev. xxiii. 4.

† Pſ. civ. 19. The word here likewiſe is מועדים. The moon, by twelve revolutions, equally meaſured out the year; and it appears, that before the flood, from the hiſtory of it, time was counted by lunar months.

ſonable

ſonable time. This is the word, which the Preacher makes uſe of in counting the proper times, or ſeaſons, for every purpoſe in life; and among the reſt, *A time to plant, and a time to pluck up that which is planted* *. The ſame word is uſed in the following paſſage. *The Lord ſhall open unto thee his good treaſure, the heaven to give the rain unto thy land in his ſeaſon* †. *Thou ſhalt come to thy grave in a full age, like as a ſhock of corn cometh in his* ſeaſon ‡. *He ſhall be like a tree planted by the rivers of water, that bringeth forth his fruit in his* ſeaſon ||. *God, that giveth rain both the former and the latter in his* ſeaſon §.

We ſee therefore how precarious the concluſion muſt be, which is drawn from the mention of the word מועדי, *ſeaſons*, Gen. i. that the year was divided into four ſeaſons in the primitive earth, as at pre-

* Eccleſ. iii. עה לטעת ועת לצקור נטוע.
† Deut. xxviii. 12.
‡ Job v. 26.
|| Pſ. i. 3.
§ Jer. v. 24.

ſent

ſent. But admitting, that the word is here uſed in this ſenſe; yet it doth not follow, becauſe the lights of heaven were appointed *for ſeaſons*, among other uſes, that this uſe of them immediately took place. If the poſition of the earth did not at firſt admit of it; but did afterwards; it is ſufficient that it did, this intention was anſwered: Which is the preſent caſe.

But this, it will be ſaid, was not the caſe with reſpect to day and night, which diviſion of time did take place immediately: This therefore could be no new grant after the flood. It took place indeed before the exiſtence of the lights of heaven; and yet we find they were appointed *to rule over the day, and over the night; and to divide the light from the darkneſs* *. And to this I do not know what is to be ſaid; but that the diviſion of day and night, which commenced on the firſt day, was aſcertained with greater preciſion and improvement,

* Gen. i. 8.

from

from the creation of the ſun, with the other great luminaries, on the fourth day; whereby day and night were equally divided into twelve hours each; And this diviſion having continued till the flood, a more unequal and variable diviſion took place afterwards; which was attended with advantages ſuitable to the ſucceeding ſtate of the earth; and therefore was inſerted as part of the grant then conferred upon the inhabitants of the new world.

But here it will be replied, That this would be the grant of a change for the worſe — That a perpetual equinox, reſulting from a coincidence of the equator and ecliptic, would be attended with a perpetual ſpring, and perpetual autumn, producing all manner of fruits, at all ſeaſons of the year; without labour and toil—That in this ſtate likewiſe there would be a conſtant ſerenity of weather, and an equal temperature of the air at all times: And that there actually was ſuch a ſtate in the antediluvian world, whence the longevity

gevity of mankind in that age is accounted for: All which is quite contrary to the ſuppoſition of any curſe, and much preferable to the ſtate after the flood.

That ſuch a ſtate, under ſuch a conſtitution of nature, did really exiſt for ſome time, in the infancy of the world, I readily admit. It was conjectured, that paradiſe was ſituated at the mouth of the *Euphrates*, about 27 degrees of north latitude *; which was a very temperate climate, and fitted for rendering its inhabitants happy in the enjoyment of all the bleſſings of their ſituation. But I cannot allow, that a perpetual equinox would alone be productive of all the happy circumſtances above recounted; much leſs would it of itſelf conſtitute ſuch a golden age, as would anſwer the deſcriptions of poets; or even the opinions of philoſophers. There muſt have been a coincidence of all happy circumſtances to form ſuch a ſtate. Such there was, when the

* Ch. iv. p. 111.

world came firſt out of the hands of the Creator; and ſuch it continued to be, as long as man continued in his innocence: But immediately upon the forfeiture of it, every thing took an unhappy turn: The ground loſt its fertility; the air its ſerenity: The heavens withdrew their kind and propitious influence, and the fruits of the earth degenerated: Huge mountains appeared: Winds, rain, ſtorms, and tempeſts, were generated: The weather grew uncertain, and often unfavourable and ſevere. When the ſun was always in the equator, the torrid zone muſt have been uninhabitable, for heat; and the two frigid zones, for cold: They were thought ſo for many ages after the ſun moved in the ecliptic for certain: Though from the teſtimony of late travellers, and particulary of Sir *Walter Raleigh*, the parts under, and near the line, are as fruitful, heathful, and pleaſant, and as fit to make a paradiſe of, as any in the world.

In

In the old world, probably a much ſmaller part of the earth was habitable than at preſent.

Notwithſtanding the conſtancy with which the heavenly bodies performed their motions; there was no conſtant tenour of any thing upon earth to be depended upon. Our own daily experience may convince us of the uncertainty there is in the operation of all ſecond cauſes. Mr. *Whiſton* juſtly obſerves, that the ſun is not maſter of the ſeaſons of the year. In our own climate, we often feel the extremes of heat and cold, within the compaſs of a few days, ſometimes hours. We riſe in *June*, and go to bed in *January*. The temper of the air doth not depend upon the ſeaſon of the year alone; but upon the winds, and other adventitious cauſes. Why, therefore, might not the ſame cauſes have the ſame effects in the old world? In the warmeſt climates, within the tropics, where there is the leaſt variety of ſeaſons, and which come neareſt to the

ſuppoſed equability of the antediluvian ſtate; there are often felt ſudden changes from one extreme to another, and the greateſt perhaps that are in the whole globe: And they are far from reaping all the advantages, which may be imagined to reſult from ſuch ſituations. In the iſland of *Barbadoes*, and ſome other places near the equator; where there is little, or no variety of ſeaſons, or alteration of the ſun's heat; they ſuffer however many inconveniences. They are ſubject to hurricanes, earthquakes, thunder and lightning, exceſſive rains, ſultry heat, feculent and unwholeſome air, and great mortalities. In moſt of theſe parts they have their different ſeaſons likewiſe. Nay there are known to be ſome countries under the ſame parallel, to which the ſun is nearly vertical; which notwithſtanding have ſeaſons differing from the heavens, and from each other. *Malabar* and *Coromandel* lie in the ſame latitude, are divided from each other only by the *Gata* mountains; and

are

are not diſtant above 70, in ſome places not above 20, miles from each other: And yet their winters and ſummers are quite oppoſite. At *Malabar*, it is ſummer from *September* to *April*: At *Coromandel* it is then winter, when it rains continually; And from *April* to *September* is the ſummer ſeaſon there; while it is winter at *Malabar* *. In *Coromandel*, during the months of *March*, *April*, *May*, and *June*, the ſun cauſes great heat, which is moſt intolerable when it is to the north at noon day. In *July* and *Auguſt*, when it is over them, and when the air had been heated ſo much before, the heat notwithſtanding is more moderate †.

* M. Buffon, Theorie de la terre Art. 9, p. 116.

† Mod. Univ. Hiſt. B. xiv. ch. 8. There ſeems to be ſome difference between theſe two accounts: According to M. *Buffon*, *March* is one of the winter months at *Coromandel*: By the other account, taken from *Varenius's* Geography, the ſummer heats begin with that month.

The like differences of ſeaſon and weather have been obſerved at Cape *Razalgat* in *Arabia*, and likewiſe at *Jamaica*; through the middle of which iſland there runs a chain of mountains from eaſt to weſt. The plantations which lie ſouth of the mountains feel the heat of ſummer, while thoſe that are on the north ſide of them ſuffer the rigour of winter at the ſame time.

Take one inſtance more of remarkable differences of weather in the ſame climate. *Peru* lies under the line, and is divided into three long and narrow parts; which the inhabitants call, the *Lanos*, *Sierras*, and *Andes*; which laſt are the ſame with the famous *Cordilleras*, which are ſuppoſed to be the higheſt mountains in the world. The *Lanos* lie along the coaſts, through the whole extent of which the ſouth-weſt wind conſtantly blows, contrary to what is generally the caſe in the torrid zone; and it neither rains nor thunders in thoſe parts: It almoſt always rains on the *Andes*: And in the *Sierras*, which lie between

tween the *Andes* and *Lanos*, it rains from the month of *September* till *April**.

Theſe known facts are inſtanced in, to ſhew how uncertain all ſuch reaſoning muſt be, as is drawn from a ſuppoſed more advantageous aſpect, or poſition, of the earth or heavens alone, without the concurrence of other circumſtances; eſpecially in a ſtate ſo long ago paſt, ſo different from the preſent in all reſpects, and concerning the natural hiſtory of which we are quite in the dark, except what light can be drawn from hints in ſcripture relating to it.

In ſupport of what hath been here advanced, I ſhall ſubjoin ſome obſervations of learned men on this ſubject, "If we take away the inclination of the earth's

* M. *Buffon*, ib. We were lately informed from *North America*, that, in the provinces of *Virginia* and *Maryland*, the winter was ſo uncommonly ſevere, that the ſheep almoſt all periſhed: While in its neighbouring provinces *Pennſylvania*, *New York*, and the *Jerſeys*, which lie north of the former, the winter proved mild. *Gent. Mag.* for June 1772, p. 294.

axis, ſays Dr. Bentley, the northern nations would periſh—one climate would be perpetually ſcorched, another blaſted with cold.—But, becauſe ſome have imagined, that, if the poles had been erect to the plane of the equator, all mankind would have enjoyed a very paradiſe upon earth, a perpetual ſpring, an eternal ſerenity, and the longevity of *Methuſelah*, without diſeaſes: Conſider, as to an univerſal and perpetual ſpring, it is repugnant to the form of the globe. For to thoſe people that dwell under the equator, this ſpring would be a moſt peſtilent ſummer; and as to thoſe nearer the poles, a perpetual ſpring would not ripen their fruits and grain—and a perpetual equinox would be pernicious to the beſt part of the globe. And there is no reaſon to expect that it ſhould conſtantly enjoy that admired calm and ſerenity. If the aſſertion were true, it would deſtroy navigation: But it is altogether precarious. For the winds and rains, and other affections of the atmoſphere,

phere, do not ſolely depend upon the courſe of the ſun; but partly, and perhaps moſt frequently, upon ſteams and exhalations from ſubterraneous heats; upon the poſitions of the moon, the ſituation of the ſeas or mountains, lakes or woods, and many other unknown or uncertain cauſes: So that though the courſe of the ſun ſhould be invariable, yet the temperament of the air would be mutable. And it is well known, that the months of *March* and *September*, the two equinoxes of our year, are the moſt tempeſtuous ſeaſons. Now if this notion of an uniform calm be precarious, then the conſtant health and longevity of men muſt be given up; for this doth ſolely, as an effect of nature, depend upon the other. Nay, ſhould we allow a perpetual calm and equability of heat, it can never be proved that men would be ſo long lived: For thoſe people who live within a degree of the equator, do not live ſo long as thoſe nearer

nearer the poles, and are inferior to them in ſtrength, ſtature, and capacities *."

Dr. *Keil* hath ſhewn, that the preſent poſition of the earth's axis is by far preferable to any other, eſpecially to that of the perpendicular poſition; and recounts ſeveral advantages of the one, and diſadvantages of the other; which ſhew how apt the earth, as it ſtands at preſent, is to ſerve the ends for which it was deſigned by its wiſe Contriver.

Among other things he obſerves, "That different degrees of heat are required for the production and ripening of moſt plants: The heat that is requiſite for the firſt growth of a vegetable, not being ſufficient for the ripening and perfecting the ſeed thereof: And that degree of heat, which is neceſſary for bringing the ſeed to perfection, would quite wither the green and tender herb. The like obſervation is made

* Dr. *Bentley's* Boyle's Lectures abridged, p. 63.

by

by Dr. *Woodward* *. This, continues Dr. *Keil*, is obtained by the preſent poſition of the earth. We perceive in the ſpring-time, that we have the heat of the ſun ſtill increaſing in ſuch a meaſure, as the plants require for their nutrition and growth. At laſt the ſun arrives at his greateſt meridian height; and then the plants bring forth their ſeeds, which grow every day more and more perfect, and then are fully ripe and fit for food; and when the ſun has performed his work in our part of the world, he returns again to the tropic of *Capricorn*, to make room for the ſnow and ice, which come in the winter, for the moiſtening and preparing the earth for a new crop: And though in the torrid zone they never have any ſnow or ice; yet at the time of the year when the ſun is vertical to them, there falls ſuch a quantity of

* P. 293. Where he ſhews that this proceſs promotes a ſucceſſion and variety of fruits and vegetables in their ſeveral ſeaſons; which would be prevented by a perpetuity of one and the ſame ſeaſon throughout the year.

rain,

rain, as not only cools the air, and makes the heat of the ſun tolerable; but alſo fattens the ground, and prepares it for the production of fruits.

But there is one more conſiderable advantage, ſays he, which we reap by the preſent poſition of the earth, not before taken notice of by any, that we who live beyond forty-five degrees of latitude, have more of the ſun's heat throughout the year, taking the ſum of the ſun's action upon us both in ſummer and winter together, than if it always ſhined in the equator.—Whereas in the torrid zone, and even in the temperate ones, almoſt as far as forty-five degrees of latitude, the ſum of the ſun's heat ſummer and winter is leſs than what it would be, were the axis of the earth perpendicular to the plane of the *ecliptic* *." And of this he hath given a demonſtration. By this bounteous diſpoſition, the inhabitants of all the earth are advantaged; by

* Dr. Keil's Exam. of Dr. Burnet's Theory of the Earth, ch. 4. p. 43.

having

having the ſun's heat increaſed, where it is wanted; and moderated where it is too hot; and likewiſe more equally diſtributed upon the whole.

Though Dr. *Keil* concludes, from theſe ſuperior advantages of the preſent poſition of the earth, that it always had this poſition; yet he elſewhere acknowledges, that there is no reaſon why the axis of the earth ſhould have one poſition more than another*. If ſo then, there is no reaſon why its axis might not have been perpendicular to the ecliptic before the deluge. As he ſtrongly and very juſtly inſiſts, that a due regard be paid to final cauſes in natural philoſophy; which in things of this nature, he ſays, are by far more certain and convincing than any phyſical and mechanical ones; and likewiſe declares for the ſquaring of our notions according to the divine revelations contained in holy ſcripture†. On theſe principles, we muſt al-

* P. 205. Exam. of Reflections on the Theory of the Earth.

† Exam. of Theory, p. 63.

low, that, notwithſtanding the manifeſt preference, which the preſent poſition of the earth is acknowledged to have above that which is here ſuppoſed it had in the antediluvian ſtate, while it was under the curſe; yet nothing hinders, but that very poſition, before the curſe, might have had advantages, which more than balanced the preſent ones; from a more favourable aſpect of the heavens; and an evener ſurface of the earth; and from other cauſes unknown to us, ſuitably to the deſerts and diſpoſition of man in a ſtate of innocence.

Nothing can more diſplay the wiſdom and free agency of the great Governor of the univerſe, than the choice of a variety of means, which are always preſent with him; and which he can make uſe of when he pleaſes for the promotion of the ſame ends. When one ſet of means is rendered leſs ſerviceable by an abuſe of them, he can have recourſe to others no leſs effectual, and make them productive of good out of evil: Which is a convincing proof, that the world is governed by a good, and free,

free, and wiſe agent; and not by a blind and neceſſary one, that is tied down by principles merely mechanical. One ſyſtem may be moſt proper for one ſtate, and another for a ſtate of a different nature. As there is a beautiful analogy between the moral and natural world, which runs through the whole, it ſhould ſeem, that a ſtate of moral rectitude ſhould be accompanied with a ſuitable rectitude of nature; and that a deviation from it ſhould be productive of an obliquity in nature analogous to it. Agreeably hereto the moral rectitude of the primitive ſtate ſeems to have been attended with a right and upright poſition of the axis of the earth. When man loſt his uprightneſs, and the whole human race had filled up the meaſure of their iniquity to that degree, as to provoke God to deſtroy the world by the flood, an oblique poſition was given it, more ſuitable to the obliquity of character, into which mankind had degenerated. The one diſpoſition of the earth was adapted to a ſtate of innocence: The other indicated a deviation from

from it; at the ſame time ſhewing a tendency towards its recovery: Both proclaiming the glory of God.

CHAP.

CHAP. VII.

THEORY OF THE RAIN-BOW.

ANOTHER branch of knowledge, for which we are entirely indebted to ſcripture, is that relating to the appointment of the rain-bow; the occaſion on which it was appointed, as well as the end and deſign it was appointed for, we ſhould otherwiſe have been for ever ignorant of.

When God gave *Noah* and his ſons poſſeſſion of the new world, he did not fail to add every motive and encouragement to excite their induſtry, and to render them happy and ſecure in the enjoyment of it.

He promiſed them the bleſſing of fruitfulneſs, and that of multiplying their offſpring, for the repleniſhing of the earth. He inveſted them with the dominion of the creatures, granted them the free uſe of *every moving thing that lived for meat*; and of *all things elſe, even as the green herb*; and reſtrained them from nothing, but blood: And, to crown the whole, he in the ſtrongeſt manner aſſures them, and their ſeed, of a perpetuity in the enjoyment, by repeated declarations, that he would not *any more ſmite every thing living; nor cut off all fleſh by the waters of a flood; Neither ſhould there any more be a flood to deſtroy the earth.* And, as if all this had been inſufficient, God proceeds to ratify his gracious promiſes by a covenant; and to confirm that covenant by an extraordinary token.

The grounds of this extraordinary ſolicitude, as it were, in the divine Being, to render his creatures eaſy and ſecure in their preſent circumſtances, ſeems to have been

the dejected ſtate, to which they had been reduced by the great and long-continued perils; and the apprehenſions they were ſtill under, that their dangers and difficulties were not yet over. The horrors of the deep, which had well nigh *ſwallowed them up*; had ſo *gone over their ſouls*; as to leave a laſting impreſſion upon their minds. And though they found themſelves upon dry land, they ſaw nothing ſcarce but deſtruction, and devaſtation; and a wide ocean around them; and they did not know how ſoon it might return; and, notwithſtanding their late miraculous deliverance, involve them in the ſame fate with the reſt of the world.

As the waters had abated gradually, till the tops of the mountains appeared, and a ſpot of earth was dry for their landing; yet they would not venture to ſtir out of the ark, till God commanded them to go forth of it*: And after they were gone forth

* In appears they were in no haſte to quit the ark, notwithſtanding their long confinement, from their

forth and landed, as they were ſo few in number, and required no large ſurface to dwell upon; it is probable that the waters took up a conſiderable time in draining and ſinking, to that degree, as to leave any large tracts of the earth dry and habitable. It was ſufficient, if they went off faſt enough to make ample room for the inhabitants of the earth, as they increaſed. What therefore with their fears, and what with the continuance of the waters upon other parts; the firſt generations of men probably kept upon, and occupied only the moſt elevated grounds; and did not venture to deſcend into the plains, but with caution, even when they found them free from water; nor perhaps then, till they were forced from the hill-countries for want of room †.

This

continuance in it, from the firſt day of the firſt month, till the twenty ſeventh of the ſecond, two months, within three days, after they ſaw that the face of the ground was dry.

† "They continued to dwell in the mountainous countries of the eaſt, where the ark reſted, till they grew

This is agreeable to the repreſentation, which we find in *Joſephus* of this matter. He tells us, "That *Noah*, in a perſuaſion that God had doomed mankind to deſtruction, lay under a mortal dread of the ſame judgment over again; and that it would effectually end in an anniverſary inundation." And he puts a prayer into *Noah's* mouth, humbly beſeeching God, *to preſerve the order of the world in its firſt frame*; which, by the way, looks as if he apprehended the very frame of it had undergone ſome great alteration. He likewiſe deprecates any the like viſitation from overtaking them, otherwiſe the ſurvivors would be more wretched than thoſe who had periſhed; if, after they had ſuffered ſuch horror of thought, and the terror of ſo diſmal a ſpectacle, they ſhould only be delivered from one calamity, to be ſwallowed up in another ‡.

grew very numerous, and wanted room; and deſcended into the plain." Bp. *Patrick* on Gen. xi. 2.

‡ *Joſ. Antiq.* lib. i. cap. 4.

Josephus farther informs us, That *Noah's* three sons were the first that came down from the mountains to settle their habitation in the plains, and drew others after them by their example; who till then had not the heart to quit the hills, for fear of a second deluge *. A generation, or two, if not more, therefore, must have passed before the son's of *Noah* could have any followers in their removal †. The first plain which we read of their having found and settled in, was that in the land of *Shinar* ‡: Where they built the tower of *Babel*, one end of which is, by *Josephus*, and some others, supposed to have been, That they might secure themselves against another inundation.

* Antiq. lib. i. cap. 5. init.

† This movement might have begun to be made about 70 years after the flood. See *Shuckford* Connect. Vol. I. p. 104.

‡ Which is at no great distance from the place where the ark is generally supposed to have rested; and where mankind first lived after the flood.

The

The firſt fathers of the renewed race of mankind having betrayed ſuch ſymptoms of fear and diſtruſt, God almighty, as above intimated, in order to raiſe their ſunk ſpirits, and to aſſure them of his favour and protection, confirmed his many kind declarations with a covenant; the terms of which are as follows—*I, behold, I eſtabliſh my covenant with you, and with your ſeed after you. And with every living creature that is with you, of the fowl, of the cattle, and of every beaſt of the earth with you; from all that go out of the ark, to every beaſt of the earth.* Where we ſee how comprehenſive the covenant is, including not only the whole human race, but extending to all the animals likewiſe, which went out of the ark, and to all their breed in future ages; which were to have the benefit of it. And the more effectually to remove their doubts, he reſumes, and in the ſame words adds—

And I will eſtabliſh my covenant with you: Neither ſhall all fleſh be cut off any more by

the waters of a flood: Neither ſhall there any more be a flood to deſtroy the earth *.

As a farther ratification of it, he confirms this covenant with an oath: So we are informed by God himſelf, through his prophet. *This is as the waters of Noah unto me*, ſays God: *For as I have ſworn that the waters of Noah ſhould no more go over the earth: So have I ſworn, that I would not be wroth with thee, nor rebuke thee.* Iſa. liv. 9.

This was the covenant, and this the foundation of it. It was a covenant of ſuch a nature, as included only one party, God having been graciouſly pleaſed to bind himſelf alone by it; as man was no more capable than the brute creatures, of binding himſelf, or being bound in it; being all alike unable to do any thing towards preventing another deluge.

But as Noah knew, that the late flood was cauſed by the wickedneſs of mankind;

* Gen. ix. 9, 10, 11.

he

he might conclude that the contrary courſe of virtue and obedience would be the likelieſt means of preventing the return of it; and this condition was probably implied, as his part of the covenant.

To give the laſt and utmoſt confirmation to his promiſe, God vouchſafed a moſt conſpicuous token of his covenant; by the preſent exhibition of which he condeſcended to convince them of his firm purpoſe and reſolution to fulfill the purport of it.

And God ſaid, This is the token of the covenant, which I make between me and you, and every living creature that is with you, for perpetual generations.

do ſet my bow in the cloud, and it ſhall be for a token of a covenant between me and the earth.

And it ſhall come to paſs, when I bring a cloud over the earth, that the bow ſhall be ſeen in the cloud.

And I will remember my covenant, which is between me and you, and every living creature

creature of all flesh: And the waters shall no more become a flood to destroy all flesh.

And the bow shall be in the cloud: And I will look upon it, that I may remember the everlasting covenant between God and every living creature of all flesh, that is upon the earth.

And God said unto Noah, This is the token of the covenant, which I have established between me and all flesh that is upon the earth.

As God had repeated his promise, and likewise repeated the covenant he made in confirmation of it; so here he over and over repeats the promise, covenant, and token; and tells them more than once, that he will remember it, and will look on the bow, as a token to remind him of it; as well as they might look up to it, as a pledge to assure them of his perseverance in his purpose of preserving the world from destruction by water. What could possibly be said, or done, more to overcome their distrust, and induce them to repose a firm and chearful reliance on the

the protection of their Creator; who had already done ſuch great things for them?

Some have thought, that if there were clouds and rain before the deluge, there muſt have been likewiſe rain-bows, and that this *phenomenon* was now only applied to this purpoſe of a ſign; which it had not been uſed for before.

But the very end and intent of it, as a ſign, ſhews that it had never appeared before this time; becauſe it could not otherwiſe be efficacious enough to overcome the doubts and fears of thoſe, to whom it was granted; had it been a familiar ſight to them. There ought to have been ſomething new and uncommon in it, to confirm a promiſe which was ſuch. It may be inferred from the very words, that it was no common appearance—*I do ſet*, obſerve, I do *now* ſet *my bow in the cloud*—It was not therefore ſet there before. The very form of the expreſſion denotes ſomething new; and is always ſo uſed in ſcripture, as might be ſhewn from numberleſs inſtances:

inſtances: "And indeed it is ſomewhat hard to conceive, how it could be a ſign, or confirmation of the covenant, which God made with *Noah*, that he would drown the world no more with water, if it had been in the clouds before; and with no regard to this promiſe." What ſecurity can this be to us, might *Noah* reply, that we ſhall not be deluged again; ſince we have often beheld this ſight, and were deluged notwithſtanding? "If we ſuppoſe it even an arbitrary ſign, and to have no connection with the effect, it ſeems, that to make it ſignificant, and ſatisfactory, it muſt be ſomething new, otherwiſe it could not ſignify a new thing; or be the confirmation of a new promiſe: And accordingly it hath been obſerved, that the ſigns by inſtitution only, mentioned in ſcripture, have all ſomething new and ſtrange; as a mark of the hand of God: At leaſt it muſt be acknowledged, that if *Noah* had never ſeen a rain-bow before, that ſign muſt have made a much more

more lively impreſſion upon him; and given him much greater comfort and aſſurance in God's promiſe, than if it had been no more than what he muſt have often obſerved before the late terrible devaſtation *."

"The opinion, ſays Dr. *Jackſon*, of thoſe that think there were rain-bows before the flood, hath no pretence of ſcripture to enforce it: And grounds in nature it can have none, unleſs they will avouch this evident untruth, That every diſpoſition of the air, or every cloud, is fitly diſpoſed to bring forth the rain-bow. And if other natural cauſes, with their motions and diſpoſitions, depend upon the final; ſuch as acknowledge the truth of ſcripture, have no reaſon to think, that either the clouds, or air, had that peculiar diſpoſition, which is required unto the production of the rain-bow, before the flood; when this wonderful effect could have no ſuch

* Univ. Hiſtory. Vol. I. p. 238. 8vo. Vide Heidegg. Hiſt. Patr. Tom. I. exerc. 15.

uſe

uſe or end, as it hath ever ſince. For it was ordained, as the ſcripture tells us, to be a ſign, or witneſs, of God's covenant with the new world, a meſſenger to ſecure mankind from deſtruction by deluges. Now, if it had appeared before, the ſight of it after the flood would have been but a poor comfort to *Noah* and his timorous poſterity; whoſe fear, leſt the like inundation ſhould happen again, was greater than could be taken away by a common or uſual ſign."

Common philoſophy teaches us, that the rain-bow is a natural ſign, which ſhews there will not be much rain after it appears, as the clouds then begin to diſperſe. For it is never made in a thick cloud, but in a thin: So that if it appear after ſhowers, which come from thick clouds, it is a token that now they grow thin. But the God of nature choſe this to be a ſign, that he would never let them thicken again to ſuch a degree as to bring a deluge upon the earth. And he vouchſafes

ſafes it not always, but at certain times; often enough to put men in mind of this promiſe, and to ſtir up their belief of it."

The reflection of the ſun from a watery cloud, is alſo a certain ſign, that though it rains in one part of the heavens, ſome other part is clear and unclouded: And thoſe rains which exhibit the rain-bow, are gentle, refreſhing ſhowers, plainly intended as bleſſings to the earth; and portending no harm to it, as the heathens ſuperſtitiouſly imagined *.

Its propriety and ſignificancy is ſo much the greater, and more univerſal, as it is ſet up in the heavens in ſo conſpicuous a

* —— Κρονιων
Εν νεφει ϛηριξε, τερας μεροπων ανθρωπων.
Hom. Iliad. λ. ver. 28.
Ηϋτε πορφυρεην Ιριν Δνητοισι τανυσση
Ζευς εξ ουρανοθεν, τερας εμμεναι η πολεμοιο,
Η και χειμωνος δυσθαλπεος — Ib. ρ. ver. 547.
Et quoniam indicium eſt permutationis auræ—ideo apud poetas legimus ſæpe irim de cælo mitti, cum præſentium rerum ſit ſtatûs mutatio.
Amm. Marcell. lib. xx. in fine.

manner,

manner, as to be visible in all parts of the world, and *a faithful witness in heaven*; as it hath proved to be, by continuing to exhibit its testimony at proper intervals, from time to time, even to this day.

"From these reasons in nature, continues Dr. Jackson, or from the tenour of God's covenant, communicated to the antient heathens by tradition, *Iris* is made to be the messenger of the gods, sent down from heaven to signify a change in the present state of things.

It is likewise called, *the wonderful*, and *the daughter of wonder*, rather *of the wonderful* *. And, indeed, the admirable form of this *glorious circle*, as the son of *Sirach* calls it, *bent by the hands of the most High*, doth naturally excite us to look beyond

* Παυρα δε Θαυμαντος Θυγατηρ ποδας ωκεα Ιρις
Αγγελιης πολεισι επ' ευρεα νωτα Θαλασσης.
Hesiod. Theog. 780.

Irim de cælo misit Saturnia Juno—
Ad quem sic roseo Thaumantias ore locuta est.
Virg. Æneid. ix. init.

the

the material and efficient cauſe of it, unto the final: And now that we have *Moſes's* commentary upon it, we may ſee in the mixed colours of the rain-bow theſe two things: The deſtruction of the old world by water; and the future conſumption of the preſent world by fire; the flaming brightneſs of which is predominant in the watery humour *."

This is what learned men have obſerved concerning the rain-bow. I will venture to go a ſtep farther, which yet I will not preſume to do, but by way of query. As this *phenomenon* was appointed for a memorial of the deluge, and as a pledge of ſecurity from any future one; ſo, whether it might not have a yet farther and more ſignificant intent, of being an intimation and ſign of the manner how, and means by which, the old world was overflowed. As the earth had its inclination given it for this purpoſe, and was made to move

* Dr. *Jackſon's* Works, vol. i. p. 62. See likewiſe Bp. *Patrick* on *Geneſis* ix. 13, 14.

ever ſince in the ecliptic; this event, and this diſpoſition of it, could not be recorded and deſcribed in a more emphatical manner, than by this noble are, drawn by the finger of God in the heavens. For we really find, that the beſt method which aſtronomers and geographers have been able to invent, to delineate the line of the true ecliptic on their globes and maps, is by an artificial circle, which ſo much reſembles that of the rain-bow, as if the firſt hint of it had been taken from it.

Be that as it may; if this conjecture be allowed to carry any probability, it will confirm what hath been advanced, concerning an alteration made in the poſition of the earth at the flood; and will raiſe our admiration ſtill the more, in contemplating the uſe and deſign of this bright meteor; which, by ſtriking our ſenſes in the vivid manner which it doth, not only reminds us of the deluge, and cauſe of it; but likewiſe furniſhes a remarkable inſtance

ſtance of what extraordinary and adorable methods the great Creator makes uſe of, to inſtruct and impreſs upon mankind, in all ages, the knowledge of his diſpenſations, and of himſelf, the author of them *. This ſhould diſpoſe us, with the wiſe ſon of *Sirach*, when we look upon the rain-bow, *to praiſe him that made it: Very beautiful it is in the brightneſs thereof.*

It compaſſeth the heaven about with a glorious circle; and the hands of the moſt high have bended it. Ecclus xliii. 11, 12.

* How wonderful are the ways of his wiſdom, in making that which threatens rain the harbinger of fair weather; and the watery cloud, which is fraught with the means that drowned the world, the merciful token of the preſervation of it! It juſtly merited the name of Wonderful, as well for the deſign, as the conſtruction of it; which is more than the heathens knew, who gave it that name.

CHAP. VIII.

TRADITIONS AND REMAINS OF THE DELUGE.

THOUGH the memory of many events which happened in diſtant ages, is liable to be worn out and effaced by time and accidents, to that degree, as to leave few, and perhaps no traces of them remaining: Yet an event, which affected the earth and mankind in general, in which the fate of the whole world was involved, muſt ſurely have left ſuch marks and impreſſions, as would withſtand all the injuries of time, and would not be wholly obliterated by any means whatſoever. The whole face of nature undoubtedly bore

bore teſtimony to the univerſal deluge for ſome ages; and veſtiges of it, of ſeveral kinds, are ſtill to be ſeen in many places. Some traditions concerning it have been met with in all parts of the world, which verify the Moſaic account of its univerſality; and his hiſtory of it is confirmed by many other antient writers.

The ark reſted on *Ararat*, a mountain in *Armenia*: And *Joſephus* informs us, that the *Armenians* called the place where *Noah* and his family went out of it, *Apobaterion*, or the place of deſcent. "We read, ſays he, of this deluge, and the ark, in all the writers of barbarian hiſtories; as in *Beroſus*, the *Chaldean* for one, who, ſpeaking of this flood, writes to this effect.—They ſay that there are ſome remains of this veſſel to be ſeen upon the mountains of the *Cordyeans* in *Armenia* to this very day; and that ſeveral people, living upon the place, ſcrape the pitch off the planks as a rarity, and carry it about them for an amulet. *Hieronymus*, the

Egyptian, in his *Phœnician* antiquities, *Mnaſeas*, and a great many others, ſay ſomewhat of this matter too: But *Nicolaus* of *Damaſcus*, in the 96th book of his hiſtory, ſpeaks to this purpoſe. In the province of *Minyas* in *Armenia*, there is a high mountain, called *Baris*; to which place there fled a great many people, as the ſtory goes, in the time of the deluge, for ſanctuary. There is a tradition alſo, of a certain man in a veſſel, that ſtruck upon the top of this mountain; and that ſeveral pieces of the timber were to be ſeen there a long time after. This, ſays he, probably was the man that *Moſes* makes mention of *."

* Joſeph. Antiq. Book i. ch. 4. Eng. by L'eſtrange. *Joſephus* quotes *Beroſus* again, in his book againſt *Apion*. " This *Beroſus*, ſays he, after the manner of the moſt antient hiſtorians," who it ſeems in general recorded this event, " wrote the hiſtory of the deluge, juſt as *Moſes* relates it. He mentions the ark likewiſe, in which the firſt father of our race was preſerved, and carried to the mountains of *Armenia*. He runs through the genealogy of the ſons of *Noah* likewiſe; their names and ages." Joſ. contra Apion, lib. i.

Euſebius

Euſebius adds, from the monuments of the *Medes* and *Aſſyrians*, a paſſage out of *Abydenus*, to the following effect—That *Siſithrus*, a name probably of the ſame import with *Noah*, having been forewarned by *Saturn* of an approaching deluge, ſet ſail for *Armenia*; where he was ſoon convinced of the truth of the divine prediction—That, on the third day after he found the rain abated, he ſent birds, once and again, to try if they could diſcover land, but without ſucceſs—That, on their being ſent a third time, they returned with their wings bedaubed with mud—That *Siſithrus*, after this, was taken by the gods from among men—And that the ſhip in which he ſailed, arriving in *Armenia*, furniſhed the inhabitants with amulets made of the wood of it; which they hung round their necks, and carried about with them *.

Alexander

* Euſeb. Præp. Evang. lib. ix. cap. 12. Vide etiam Cyrill. I. adv. Julianum, Vide Syncellum, p. 30, 31.

Alexander Polyhiſtor's teſtimony agrees with that of *Abydenus*, as it is preſerved by *Cyril.*—That in the times of this *Xiſuthrus*, there happened a great deluge—That he himſelf was ſaved, having been forewarned of it by *Saturn*, and admoniſhed by him to build a veſſel for the purpoſe, which he betook himſelf into, taking with him birds, reptiles, and cattle; and rode upon the waters in it †.

Plutarch, likewiſe, in his treatiſe concerning the ſagacity of animals, mentions *Deucalion's* ark, who is often by heathen writers confounded with *Noah*; together with the ſending out of the dove; which, by her return, indicated the continuance of the flood; and at laſt, by not returning, ſignified the abatement of it ‡.

Melo,

et Euſeb. Chron. Hieronymi opera de locis Hebraicis init. tom. i. p. 412. Arcis et diluvii omnes qui barbaras ſcripſêre hiſtorias recordantur.

† Cyril. ib.

‡ Plutarch. de Solert. Animalium. Plutarch elſewhere tells us, that *Oroſis* went into the ark, on the 17th

Melo, who wrote a book againſt the *Jews*, makes mention of a man, who, at the time of the deluge, had eſcaped it with his children, and had been deprived of his ſubſtance, and driven out of *Armenia* by the inhabitants; and that, after traverſing the interjacent parts, he came into the hill-country of *Syria*, which he found unoccupied ||. Here is the teſtimony of an adverſary, to the truth of the *Moſaic* hiſtory of the deluge.

But the moſt remarkable, as well as the fulleſt; the moſt exact and circumſtantial of any, is that of *Lucian*; a bitter enemy

17th of *Athyr*, which month is the ſecond after the autumnal equinox, the ſun then paſſing through *Scorpius*; which agrees exactly with the day aſſigned by *Moſes* for the beginning of the deluge. This is a very remarkable atteſtation to the truth and preciſion of the *Moſaic* account of it. Plut. de Iſide et Oſirid. p. 356. Univ. Hiſt. vol. i. p. 226.

|| Euſeb. Præp. Evang. lib. ix. cap. 19. This is juſtly reckoned a jumbled account, in which *Noah's* preſervation from the deluge is confounded with *Terah's* migration from *Chaldea* to *Haran*, and *Abraham's* ſettlement in *Canaan*.

to

to chriſtianity; and therefore no friend to *Moſes*, or his writings, had he been aware that he was bearing witneſs to them. He profeſſes he had his information in *Greece*, and from the *Greeks*, concerning that *Deucalion*, in whoſe time a great inundation happened. The paſſage is long; but it well deſerves a place here, for the ſake of the Engliſh reader; as it exhibits an inſtance of the leaſt corrupted tradition, and the moſt agreeable to the *Moſaical* writings, of any that I remember to have met with: And it contains a curious account, not only of the flood, but likewiſe of the character of the antediluvians, beyond what I think is any where elſe to be found. The paſſage is as follows—"The preſent race of men, ſays he, are not deſcended from thoſe that originally exiſted: For that generation all periſhed.

Theſe are of a ſecond original, who ſprang from *Deucalion*, and in proceſs of time increaſed to a great multitude. The former race of men are thus reported of:

Being

Being very injurious, they perpetrated unlawful practices; for they neither obſerved their oaths, nor were hoſpitable to ſtrangers; nor had any pity upon ſupplicants: For which offences they were overtaken with a dreadful calamity. For the earth unexpectedly diſcharged a vaſt quantity of water; and great rains falling at the ſame time, the rivers overflowed, and the ſea itſelf overſpread the earth; inſomuch that all things became water; and all mankind periſhed: *Deucalion* alone was left to be the father of another race of men, on the merit of his prudence and piety. He was preſerved in this manner. He took his ſons, and the women of his family, into a large ark which he had provided: And as he entered it, hogs, and horſes, lions, ſerpents, and other terreſtrial animals, flocked to him, all in pairs; and he received them all: Nor did they offer to hurt him; great friendſhip, from the influence of the Deity, having aroſe between them: And thus they all ſailed together

gether in the ſame veſſel, as long as the waters prevailed. Theſe are the reports of the *Greeks*, ſays he, concerning *Deucaleon* *."

All this is ſo agreeable to the *Moſaic* account, and ſavours ſo little of the muddy channel of tradition, that it ſeems to have been drawn from the fountain-head. Our author ſays he had it from the *Greeks:* But, if the truth were known, I am apt to think they were *Greek* chriſtians; who were of courſe converſant with the writings of *Moſes*; but to whom, as ſuch, he did not care to own his obligations, for this piece of hiſtory: We are however obliged to him, for adopting it,

* Lucian. de Deâ Syriâ. Vide etiam Timon Luciani. Plato alludes to the deluge in his *Timæus:* And *Ovid* is well known to give a very full and circumſtantial deſcription of it in his Metam. lib. i. which he, as well as others, confounds with that of *Deucalion*.

Τὸν Ἕλληνες μὲν Δευκαλίωνα, Χαλδαῖοι δὲ Νῶε ἐπονομάζουσιν, ἐφ' οὗ τὸν μέγαν κατακλυσμὸν συνεβῆ γενέσθαι ſays Philo, de præmiis et pœnis, p. 913.

and

and by that means rendering it, though undeſignedly, a valuable atteſtation to the truth of ſcripture. What he ſubjoins, concerning a ſmall chaſm, or gulf, which ſwallowed all the water, which he ſays he ſaw, the building of a temple to *Juno* upon the ſpot; and the yearly reſort of people from all parts, with water to pour into this gully-hole—All this ill-ſuits what went before, and betrays the ſillineſs and abſurdity of heatheniſh ſuperſtition and idolatry.

Traditions concerning the flood have been found in all parts of the world; though generally, as might be expected, much corrupted.

An eaſtern writer tells us, that among the *Perſians*, though ſome of thoſe who embrace the *Magian* religion are ſaid to deny the flood, or at leaſt the univerſality of it—yet the orthodox acknowledge this general deſtruction by water, wherein all mankind periſhed, except ſome few that were preſerved by Providence; and that it

was ſent by God, to puniſh the crimes of mankind *."

"We are told by the ſame author, that the *Indians* acknowledge no deluge: But this muſt not be underſtood of all: For the *Bramins* ſay, that the four tribes, or *caſts*, of which the firſt race of men conſiſted, degenerating from their primitive innocence—their impiety and wickedneſs grew at length to ſo inſufferable an height, that God's indignation was juſtly provoked; and he ſent a flood, which deſtroyed all nations without exception: After which, God created three perſons of greater excellency than thoſe of the former generation, to repair mankind †."

Many *Spaniſh* writers give an account, that the memory of the flood, of the ſeveral ſpecies of animals having been preſerved, and of the raven and the dove, ſtill remained among the natives of *America*,

* Univ. Hiſt. Vol. I. p. 228.

† Ibid.

rica, in many places; when firſt viſited by their countrymen *.

" The *Peruvians* believed that there formerly happened a deluge, in which all the people of their continent periſhed; except a few, who eſcaped the common de-

* Sed et in Americæ partibus, Cubâ, Mechoacanâ, Nicaragâ, diluvii, animalium ſervatorum, quin et corvi et columbæ, ſervatam memoriam: diluvii ipſius, etiam in eâ parte, quæ nunc Caſtella Aurifera vocatur, Hiſpani complures teſtantur.

Grot. de verit. rel. Chriſt. lib. i. ſect. 16.

" A general notion of the deluge prevailed in *Cuba*; and the *Indians* affirmed, they were the deſcendants of an old man, who built a veſſel, in which he put the male and female of all animals; and thereby ſaved all animated beings from the univerſal devaſtation by water." Mod. Univ. Hiſt. Vol. xxxviii. p. 39.

" The *cazique* of *Nicaraqua* was very deſirous of knowing, whether the Chriſtians had any knowledge of the flood that deſtroyed the world; and was equally aſtoniſhed at their anſwering in the affirmative, as they were at his queſtion." Ib. p. 282.

The *Eſkimaux Indians* on *Hudſon's* bay have an imperfect traditional account of the deluge; only they ſubſtitute a beaver, for the dove. Phil. Tranſ. for the year 1770, Vol. lx. Art. 13.

ſtruction,

ſtruction, by retiring into certain cavities, or hollows, on the tops of the higheſt mountains; whoſe poſterity at laſt repeopled the world. Some traditional notions of this kind prevailed alſo among the antient inhabitants of *Hiſpaniola*, as we are informed by *Gemelli*. There is likewiſe mention made in the antient hiſtories of *Mexico*, of a general flood, that ſwept away the whole race of mankind, except one man, and his wife. Theſe two perſons, according to them, had a numerous iſſue; but all their children were dumb, till endued with the faculty of ſpeech by a dove. To which they added, that the primitive language, ſpoken by the immediate deſcendants of the aforeſaid pair, was ſplit into ſuch a variety of tongues, or dialects, that they could not underſtand one another, and therefore were neceſſitated to migrate into different regions; and became there the founders of different nations. Nay ſome of the *Americans* expreſly affirmed, that all men deduced their origin

origin from four women; which ſeems to approach pretty near to the *Moſaic* hiſtory, that makes all nations to have deſcended from *Noah*, and his three ſons. All which traditional notions manifeſtly imply, not only, that the *Americans* ſprang originally from *Noah*, and his ſons; but likewiſe, that ſome of their anceſtors were acquainted with the *Moſaic* hiſtory *."

There is an obſcure tradition relative to the flood, preſerved among ſome of the moſt ignorant people in *Africa*. Some of the moſt ſenſible among the *Hottentots* ſay, that God curſed their firſt parents, who had grievouſly ſinned and offended, and all their poſterity, with hardneſs of heart; who, according to another tradition which prevails, and is carefully preſerved throughout the different nations, were ſent by God himſelf, and came into their country through a *window*: That the man's name was *Nôh*, and the wo-

* Univ. Hiſt. Vol. xx. p. 195.

man's *Hingnôh*; who taught their deſcendants to do many things, and keep cattle*." The offence, and curſe in conſequence of it, the memory of which is preſerved in the tradition, is probably that of *Ham*, whoſe deſcendants theſe people undoubtedly are; and who, together with his father *Noah*, came out of the *window*, or door of the ark. They have, it ſeems, preſerved the name of their great progenitor, and the tradition of their deſcent from him, through *Ham*, his wicked ſon; though they have loſt almoſt all ſenſe of religion beſides.

As theſe traditions greatly confirm the *Moſaic* account of the deluge, ſo will it be yet farther corroborated from a view of the natural conſequences and effects of the deluge itſelf, many of which are remaining; which muſt add the laſt conviction to the certainty of the event.

This diſmal cataſtrophe muſt undoubtedly have been attended with very conſi-

* Mod. Univ. Hiſt. Vol. xv. p. 509.

derable

derable effects: Such an immenſe body of waters, lying ſo long upon the earth, muſt have greatly looſened and diſſolved the glebe: By their fluctuation, they muſt have toſſed it much about; and as they decreaſed, and ſubſided, they muſt have carried down much ſoil with them, from the higher, to the loweſt parts of the earth: They muſt likewiſe have depoſited much of their own contents in the places which they left: Hollows muſt have been filled, and the whole face of the earth covered with the carcaſes of fiſh, and marine ſubſtances; as well as with thoſe of land animals, trees, and vegetables, promiſcuouſly diſperſed, over the ſurface; and buried in ſludge and rubbiſh, and other ruins of the globe: All which, when putrified and diſſolved, and reduced into one maſs, would greatly contribute to enrich and fatten the ſoil.

The raging of the waves, and their daſhing againſt the ſides of the precipices, and ſteep mountains, muſt have weakened

the contexture of the very rocks; and tumbled ſome of them down: And the whole world muſt have become a wreck, and have made one wide waſte.

The ſcripture indeed, takes no notice of any ſuch effects of the deluge. It only gives a plain narration of the fact, and then leaves it to ſpeak for itſelf: As certainly it ſufficiently did, in the deſolation which it made in the earth: very ſtriking veſtiges of which muſt have been manifeſt for many ages; and have kept up the tradition of it freſh in men's minds. And though the traces of the flood are in a great meaſure loſt, and worn out by time; yet even now, we may obſerve viſible marks of it, in the nakedneſs of the tops and ſides of the mountains; the ſoil being waſhed away from many of them, even to the bare rock: And the large heaps of ſtones, and even huge fragments of the very rocks themſelves, which are often ſeen lying at the foot of them, are laſting monuments of this great event.

Theſe

Theſe appearances indeed might in part have been effected, time after time, by rains, ſtorms, and earthquakes: But the chief cauſe to which they are imputed by naturaliſts, and which ſeems moſt adequate to the production of them, is the univerſal deluge.

Other remarkable effects of the deluge are to be ſeen, in the hollows, dingles, and narrow vallies, which the ſides and deſcents of the mountains, and the ſkirts of the hills are indented with. The mountains were not of this form before the flood. Theſe cavities were made by the running off of the waters at the abatement of it; whence the hills have received their preſent ſhapes. The caſt and figure of them ſhew, that this was the effect of water; large bodies of which made wide channels at firſt, where they found leaſt reſiſtance in the ſoil. Theſe channels, as they became deeper, became likewiſe gradually narrower, in proportion as the waters ran off and decreaſed, re-

quiring daily leſs and leſs room; but ſtill continuing to ſcoop their way, till at length they ſpent themſelves, and fell into the beds, which they at preſent occupy in the bottoms of the vallies. This ſeems to have been a work of time, and probably took up ſome ages: Nay, it may be ſaid, to have been always in ſome meaſure carrying on, even to this very time.

The waters wear the ſtones *, by degrees: And that the vallies were thus worn and excavated by them, into their preſent forms, appears from the contour, and correſpondence, that there is between thoſe ranges of hills, which run along each ſide of them, being in general of near the ſame height; and winding in ſuch a manner, as, when they advance on one ſide, they recede on the other: Whence they have been obſerved to reſemble ſalient and rentrant angles in fortification, anſwering al-

* Job xiv. 19.

ternately

ternately to each other; which proves, that theſe correſpondences were made by the currents which ran between them. To uſe the words of M. *Buffon*, to whom I owe this obſervation, "Ce ſont, en un mot, ces courans qui ont creuſé nos vallees, figuré nos montagnes, et donné à la ſurface de notre terre—la forme qu'ell a conſervé encore aujourd'hui." p. 166.

There are remains of the deluge, of another kind, which may be thought yet more certain and indubitable. Theſe are, as hinted above, the ſkeletons and bones of animals, buried in the ground on the ſummits of mountains; ſome of which are found in quite different parts of the world from thoſe which they now inhabit: Theſe, together with foſſil trees, and vegetables, of foreign growth, have not otherwiſe been well accounted for, than by ſuppoſing them to be the remains of the flood; and to have lain in the places where found ever ſince.

Not to inſiſt upon other inſtances taken notice of, and recounted by naturaliſts, I ſhall recommend the following only to obſervation. In the *Phil. Tranſactions* for 1769, we find obſervations on bones, commonly ſuppoſed to be elephant's bones; which have been found in *America*, near the river *Ohio*; though no elephants have ever been ſeen in all that vaſt continent. There is however a material difference between the grinders of the common elephant and thoſe of this animal; which appear to have belonged to a carnivorous creature, or to an elephant of the mixt kind; which the author calls a pſeudo-elephant, with which naturaliſts being wholly unacquainted, he very piouſly concludes, that we have reaſon to thank heaven, that its whole generation is probably extirpated. But as there are no pſeudo-elephants, nor ever have been, that we know of; as the bones of this animal ſo much reſemble thoſe of an elephant in other reſpects; and as its grinders, which I have

have ſeen*, are of the ſize of thoſe of other elephants, and too large for any other animal at preſent known, is it not probable that they belonged to an elephant, that was drowned in the univerſal deluge, and was carried by the waters into that country, and there depoſited: That elephants before the flood were carnivorous; that the pair of elephants which were received into the ark became herbacious, having been there fed with fodder; which is the only food that can well be ſuppoſed to have been provided for the ſuſtenance of all kinds of creatures there: And that from thenceforward, the elephant by degrees became altogether herbacious, or granivorous; its grinders having undergone a ſuitable alteration? And for this reaſon it may be, that the elephant cannot at preſent live in *Siberia*, and other poor and cold countries, for want of vegetable food; where formerly he might live by preying upon other crea-

* Theſe grinders are to be ſeen, ſome of them at the *Britiſh Muſeum*, and others at the repoſitory of the *Royal Society*.

tures?

tures? And if this be the caſe, we have no leſs reaſon to be thankful to providence for the change, than we ſhould be for the extirpation of ſuch a creature*. But to proceed.

Not only the remains of land animals are found under *ſtrata* of earth and ſtone of different kinds, ſuppoſed to have been caſt over them by the deluge; but ſhells, and bones of fiſhes, ſome entire ſkeletons of them, are often found in great abundance †, on the tops of the higheſt, and moſt inland mountains, in all parts of the world, intermixt, and incorporated with chalk, marl, ſtones, metals, and mineral concretions of various kinds; ſome of which were formerly ſuppoſed to have had no manner of relation to any marine bodies; but are now found to be ſuch: Of which ſort are

* See obſervations on the abovementioned ſuppoſed bones of elephants in *Phil. Tranſ.* for 1769, Vol. LVIII, by Dr. *Hunter*.

† See an account of an aſtoniſhing quantity of ſea ſhells found in *Touraine*, at the diſtance of 36 leagues from the ſea, in M. *Buffon*, p. 97.

the

the *Belemnites*, *Lapides Judaici*, *Cornua Ammonis*, &c. Some at preſent never met with in the ſeas, or on the coaſts, bordering on the places where ſuch foſſils are found; and others in no ſeas whatſoever; being therefore ſuppoſed to have been inhabitants of the great deep, which at this time emptied itſelf of them upon the land. From theſe, and many the like *phenomena*, it is very juſtly concluded, that wherever they are met with, it is certain, water muſt have overflown; and ſince they are found in every part of the earth, the tops of the higheſt mountains, and moſt diſtant from the ſea not excepted; it is equally certain ſuch overflowing water muſt have been univerſal.

"There are in fact at this day, ſays a ſpirited writer, as evident, as demonſtrative, as inconteſtable proofs of the deluge, ſcattered over the face of the whole earth, at the diſtance of about 4000 years, as if it had happened but laſt year. Let nature, let the mountains themſelves, be appealed

to,

to, whether the waters covered them, or not. Examine the higheſt eminences of the earth; and they all, with one accord, produce the ſpoil of the ocean, depoſited upon them on that occaſion; the ſhells and ſkeletons of ſea-fiſh, and ſea-monſters of all kinds. The *Alps*, the *Appenine*, the *Pyrenees*, *Libanus*, and *Atlas*, and *Ararat*; every mountain of every region under heaven, where ſearch hath been made, from *Japan* to *Mexico*, all conſpire in one uniform, univerſal proof, that they all had the ſea ſpread over their higheſt ſummits. Search the earth: You ſhall find the mouſe-deer, a native of *America*, buried in *Ireland*; elephants, natives of *Aſia* and *Africa*, buried in the midſt of *England*. (We may add, as we have ſeen above, in *America* likewiſe.) Crocodiles, natives of the *Nile*, in the heart of *Germany*; ſhell fiſh, never known in any but the *American* ſeas, together with the entire ſkeletons of whales, in the moſt inland regions of *England*; trees of vaſt dimenſions, with their roots and tops; and ſome alſo, with leaves and fruit, at the bottom

bottoms of mines and marls (if ſome of theſe had not been lodged there before, by the earthquake at the fall); and that too, in regions, where no tree of that kind was ever known to grow; nay, where it is demonſtrably impoſſible they could grow: Nay more, trees and plants of various kinds, which are not known to grow in any region under heaven *."

It was late before this branch of natural ſcience began to be cultivated; aud much later before it gained but little credit, having met with great neglect for a long time after the revival of other parts of learning; and even with ſome oppoſition. It was not till near the latter end of the ſixteenth century, that a *Potter*, who had no advantages of learning, had the hardineſs to maintain, in the face of all the doctors of *Paris*, that foſſil ſhells were the real ſhells of fiſhes, that had been depoſited by the ſea, in the places where they

* Revel. Exam. Vol. I. p. 192, from *Woodward's* Natural Hiſtory of the Earth, *enlarged*, and the Defence of it. *Bochart*, &c.

were

were ſince found; and that animals, and fiſh eſpecially, had given to figured ſtones all their differences of figure. After this, the ſyſtem of this natural philoſopher, as he might juſtly be called, having owed his philoſophy to nature alone, lay dormant for near a century; when it was revived with ſpirit, by ſeveral learned perſons; and proſecuted with ſuch ſucceſs, that the moſt experienced philoſophers are now agreed upon it ſo well, that it ſeems to be inconteſtably eſtabliſhed. The author's name was *Barnard Paliſſy* *.

This ſyſtem did not meet with ſuch general approbation, without being thoroughly canvaſſed. A learned man of our own nation, Dr. *Plot*, and ſome other naturaliſts, conjectured that theſe ſuppoſed ſhells, and teeth of fiſh, bones of animals, intire and partial vegetables, and other ſtrange appearances, found on the tops of the higheſt mountains, and in the bowels of the earth, and ſometimes incorporated with

* M. *Buffon*, Theorie de la terre, Art. viii. p. 97.

chalk, ſtone, marble, and other heterogeneous ſubſtances, were only ſome *mock productions* of nature, or originally formed in the places where they are found, by ſome plaſtic power of ſalts, or other minerals; for this reaſon, among ſeveral others, that living animals, or fiſh, have been found in ſome of thoſe foſſil ſhells; and that ſome ſuch marine ſubſtances have been formed and generated in human bodies; and therefore it is ſuppoſed, they were formed by a ſpermatic principle, as fiſh ſpawn, received into the chinks, and other *meatus's* of the earth; and falling down in rains, *&c.* But theſe inſtances are too rare, and too equivocal to form any general ſyſtem upon, eſpecially one of ſuch a nature: Nor, as it hath been obſerved, can by any means be admitted with regard to many of theſe foſſils; ſuch as the *gloſſopetræ*, or teeth of the ſhark, and the other bones of larger creatures; however diſputable the caſe might be, with regard to ſome ſhell fiſh, whoſe ſhells might poſſibly preſerve them in the earth; and with regard to ſubterraneous

woods,

woods, and foſſil trees, eſpecially of ſuch as are of the growth of thoſe parts where they are found; which might be accounted for from other cauſes. But thoſe of a quite foreign growth, which are never ſeen growing in the climate, or country where found, cannot be preſumed to be brought there, any otherwiſe than by the deluge.

This opinion therefore, that foſſil and putrified ſhells, and all ſuch like *phenomena*, are mere *luſus naturæ*, ſtands upon ſuch ſlender grounds, that it cannot be ſupported; and I think it is now in a manner quite given up. It is indeed ſuch, as, if purſued to its utmoſt conſequences, would terminate in atheiſm. Dr. *Woodward* hath thoroughly ſifted, and inveſtigated all theſe appearances; and hath found, and proved them to be in reality, what they ſeem to be: And no one, that I know of, hath conteſted it with him. We may look upon them therefore, as ſo many monuments of the deluge; as *medals* ſtruck on this memorable occaſion.

But

But here it is neceſſary to make a diſtinction. It was obſerved in Chap. IV. p. 93, &c. that foſſil ſhells, and fiſhes, and other marine productions, are often found incloſed in the bowels of the higheſt mountains, and buried in the bottoms of the deepeſt mines: And in this chapter it is obſerved, that the like are found on the tops of the high mountains. Theſe are all generally confounded by naturaliſts, and attributed to one and the ſame cauſe; which they ought not by any means to be. Thoſe which are buried at great depths in the earth, have the beſt claim to be the offspring of the earthquake, by which the mountains were originally raiſed: But thoſe foſſils which lie on the tops of mountains, or other places near the ſurface, bid faireſt for being the depoſits of the deluge. Where petrified vegetables, trees, bones of land animals, and the like are found; I ſuppoſe, for this reaſon, they do not lie very deep; and are ſeldom, if ever, met with in mine-works, at the

bottoms of mountains, or incloſed far within their bowels; where they cannot well be ſuppoſed to have been lodged either by deluge or earthquake: And I would beg to recommend to naturaliſts an attention to this circumſtance; and that they would conſider the nature and kind of them, together with the depths in which they lie—whether they have the effects of fire upon them, or whether they are within the ſphere of overflowing water; and might be the wrecks made by that element. By this means they would be enabled to judge; whether theſe natural medals, as they may be called, are to be eſteemed, as monuments of the fall, or of the deluge.

CHAP.

CHAP. IX.

OF THE NATURAL IMPEDIMENTS TO THE RETURN OF THE DELUGE.

WHEN God made his covenant with *Noah*, that there ſhould not any more be a flood to deſtroy the earth, and ſet his bow in the cloud, as the token of this covenant; no doubt but his omnipotence was able to perform the terms of it, without the uſe of any natural means: Yet, as he hath conſtituted certain laws in nature, by which his providence conſtantly acts in the government of the world in general; ſo it is natural to ſuppoſe that he acts by thoſe laws in this, as well as all

other reſpects: And therefore that he hath by various means, ſome of which he hath been pleaſed to make known to us, rendered it impoſſible, by the preſent conſtitution of things, as well as by his will, that the world ſhould be drowned again: As it ſeems indeed to be, according to the opinion of philoſophers.

In conſequence of his promiſe to *Noah*, God not only *gave the ſea his decree, that the waters ſhould not paſs his commandment* *: But his word aſſures us, that he *ſet* a bound *to the waters, that they may not paſs over; that they turn not again to cover the earth* †. *He compaſſed them with* bounds—*and ſet* bars and doors: *And ſaid, Hither ſhalt thou come, but no farther; and here ſhall thy proud waves be ſtayed* ‡.

Theſe look like ſome natural means, made uſe of in conſequence of the above-mentioned covenant; ſuch, therefore, as

* Prov. viii. 29.
† Pſ. civ. 9.
‡ Job xxvi. 10. xxxviii. 10, 11.

had not been uſed before, otherwiſe they would have been effectual in preventing the deluge; as well as they have been ſince, in reſtraining a return of it. To point out ſome of the means for this purpoſe—

1. It was ſuppoſed above, that the earth was deluged by a change in the poſition of it. It ſeems, therefore, abſolutely neceſſary, on that ſuppoſition, to continue it in the ſame poſition it was then put into; or that it ſhould vary from it, but by very gentle degrees; which alone, without any other means, would ſeem ſufficient to preſerve it from ever being deluged again. Otherwiſe, by making any farther ſuch change in the poſition of it, it would be obnoxious to the like cataſtrophe. But,

2. Not to depend upon our own reaſonings and conjectures, we have the more ſure word of God, to guide and aſſiſt our obſervations. *Fear ye not me? ſaith the Lord—which have placed the ſand for the bound of the ſea, by a perpetual decree, that*

*it cannot paſs it: And though the waves thereof toſs themſelves, yet can they not prevail: Though they roar, yet can they not paſs over it**. Here we ſee, that the *bounds* and *bars* above-mentioned, ſome of them at leaſt, are none other than the looſe ſands which the ſea is made to throw up, as a bank againſt itſelf; which, how unlikely ſoever it might otherwiſe ſeem, is yet made uſe of as a natural means for this purpoſe. This we often ſee is the caſe on a lee-ſhore; where the water, were it not for theſe mounds, by its fluency, and its being ſpecifically lighter than earth, would riſe above it, and overflow it; and the tides eſpecially, would always drown all the lower grounds. This is a remarkable inſtance of God's eſpecial providence: And the more ſo, as the winds ſet againſt theſe ſhores, and drive the waters more forcibly upon them: But, by this means, they carry their own remedy with them, and fence againſt

* Jer. v. 22.

them-

themſelves. *The Lord on high is mightier than the mighty waves of the ſea* *.

Rocks and cliffs are ſtronger, and higher barriers: Yet, if the tides and flowings of the ſea were not under certain laws, which, as it were, ſay unto them, *Hitherto ſhall ye go, and no farther*, we could not tell what rocks or cliffs, or even mountains, would be able to withſtand them. For, contrary to the natural proclivity of water, to run and ſpread, wherever it hath room, the ſea riſes from the ſhores, and ſwells itſelf up into a protuberance or convexity. This is evident, from the appearance of a ſhip under ſail, which as it goes out to *high* ſea, is gradually loſt ſight of. This is taken notice of in ſcripture, and aſcribed to its proper cauſe, the power of the Almighty. *He gathereth the waters of the ſea together as an heap* †. Not only at the paſſage of the *Iſraelites* through the red ſea, and *Jordan*, were *the waters* thus *ga-*

* Pſ. xciii. 4.
† Pſ. xxxiii. 7.

thered together; the floods ſtanding upright as an heap, and the depths congealed in the heart of the ſea *. But, in general, and at all times, they are heaped up to a certain degree: The ſea, as well as land, being of a ſpherical figure; which muſt bring them nearly to a level with each other; and by this figure it is circumſcribed, and kept within its proper bounds.

3. It was obſerved, ſo long ago as in the days of *Job*, that there was a failure and decreaſe in the waters, both of the ſea and rivers: This is illuſtrated by a compariſon, which implies, that this waſte ſhall not be repaired, nor the ſea repleniſhed, till the heavens be no more. *The waters fail from the ſea; and the flood decayeth and drieth up: So man lieth down, and riſeth not till the heavens be no more* †. Theſe words are plain and expreſs, and admit of no other meaning. The decay ſhall be perpetual, and continue till the conſum-

* Exod. xv. 8.

† Job xiv. 11, 12. Comp. ch. xxviii. 4, 11.

mation

mation of all things. It was obſerved, Chap. V. that there are grounds to believe, both from nature and ſcripture, particularly from 2 *Pet.* iii. 5, 6, 7, that the antediluvian world greatly abounded in water—that the earth bore but a ſmall proportion to it,—much ſmaller, perhaps, than it doth at preſent; and, therefore, might have been more eaſily overflowed by it.

If, therefore, there be leſs water, and more land, in the preſent earth, than there was in that before the flood; and if this water is likewiſe in a decreaſing ſtate, here is another ground of ſecurity to the world from being overflowed by it: And that this is truly the caſe, we may be inclined to believe from the following conſiderations.

Many naturaliſts have obſerved, That the ſea ſubſides, and the land gains upon it various ways. It hath been remarked, That the countries bordering upon, or within a moderate diſtance of, the centre

lines

lines of the earth*, are, generally ſpeaking, more antient than thoſe which are at a greater diſtance from them—that the moſt antient are the higheſt and drieſt—and that the laſt inhabited are the loweſt; The reaſon of which is ſuppoſed to have been, that the latter abounded with marſhes and lakes, and in ſome parts ſtill continue to do ſo; which are plain indications that the ſea hath but lately left them. Hence it is that *Aſia* is the moſt antient, and firſt inhabited country in the world; as from the teſtimony of all hiſtory it appears to be: And that *Europe* was probably planted much later, eſpecially the weſtern parts of it bordering on the ſea-coaſts, which did not become habitable dry land, till in after-ages †.

It is farther obſervable, that the rivers conſtantly carry vaſt quantities of gravel, ſoil, and ſludge, from the mountains, and

* By the centre lines of the earth, are meant the centres, or middle parts of the great continents.

† See M. Buffon, p. 35.

lands,

lands, through which they run, into the ſea; by which means they advance its ſhores, or form little iſlands in it: Such as thoſe at the mouth of the *Nile*, the number of which hath been obſerved to increaſe from time to time. Theſe, by degrees, are joined to the continent: An inſtance of which is that ſpot, on which the *Pharos* ſtands, which was an iſland when that building was erected upon it, but it now makes a part of the main land; and by this means, ſome have gone ſo far as to ſuppoſe that the whole land of *Egypt* was gained: Whence antient hiſtorians have called it, Δωρον πόλαμε. And *Seneca* ſays, "That all *Egypt* was formed and grew from the mud of the river: For, if *Homer*, ſays he, is to be believed, the *Pharos* was ſo far diſtant from the continent, as a ſhip, under full ſail, could reach in a day's voyage: But now it is joined to the continent *."

The

* Ægyptus ex limo tota concrevit: Tantum enim, ſi Homero fides, aberat a continenti Pharos, quam navis

The *Low Countries*, as they are called, ſeem to have been gained from the ſea in the ſame manner. The like is ſuppoſed to have been the original of the fens of the iſle of *Ely*, *Lincolnſhire*, *Norfolk*, and *Romney* marſh.

The *Lagune*, or ſhallows about *Venice*, fill up ſo faſt with the ſoil carried into them by the great rivers, which empty themſelves into the gulph of *Venice*; that it is not without great charge and labour, that they are able to keep their channels open, and ſupplied with water: And notwithſtanding all their endeavours to the contrary, it is ſuppoſed *Venice*, in an age or two more, will be added to the continent †.

navis diurno curſu metiri, plenis lata velis, poteſt; ſed continenti admota eſt. Turbidus enim defluens Nilus, multumque ſecum limum trahens, et eum ſubinde apponens prioribus terris, Ægyptum, annuo incremento, ſemper ultra tulit. Inde pinguis et limoſi ſoli eſt, nec ulla intervalla in ſe habet; ſed crevit in ſolidum, areſcente limo, quo preſſa erat, &c. Sen. Nat. Quæſt. lib. vi. cap. 26.

† See Ray's Diſcourſes, p. 45. And M. Buffon, Art. xix. p. 213, et ſeq. where many more inſtances of the like kind are to be found.

It

It is true, there are places, where the ſea hath gained upon the land, and overflowed it. But the inſtances are rare, and I conceive may be accounted for—from a receſs of the ſea from the oppoſite coaſts; from the banks, whether formed by nature, or art, being weak; and from the ſoil in thoſe parts lying low; and, being of a light, and looſe contexture, hath been waſhed away, and carried into the cavities of the adjoining ſeas; by which means, the beds of thoſe ſeas have been raiſed, and rendered ſhallower; and on that account, acquiring a larger ſuperficies, they have overſpread thoſe low lands adjoining; the real quantity of the water having not contributed to this end, by any increaſe of it.

The ſea doth not receive ſo great a ſupply of water from the rivers, which have leſs water in them than they formerly had. This is obſerved of many great rivers. Eight, or ten, of the greateſt rivers in *Europe* empty themſelves into the *Black-*

Black-ſea: And theſe are found to grow daily leſs and leſs *. The inundations of the *Nile* are not ſo great as they have been in former times; which is owing to the elevation of its banks on the one hand, and to a diminution of its waters on the other. *Herodotus* relates, that it took up a hundred days in riſing, and was nearly as many in falling, when he wrote; whereas now it riſes and falls in leſs than half the time, as it doth not take up above forty days for each purpoſe †. The channels of many rivers appear to have been much wider formerly, than they are at preſent; ſo as to have taken up the whole breadth of ſome narrow vallies, which is viſible from the old banks, which run on each ſide of them; but which at preſent lie very diſtantly from the beds of their reſpective rivers, which have retired from them. I have obſerved, two or three

* M. Buffon, p. 149.

† Ib. p. 132. Herod. lib. ii. cap. 19.

of

of theſe old banks in ſome places, riſing in ſhelves above each other.

This appears likewiſe from the beds of gravel and ſand, which are frequently found in ſuch vallies, under the vegetative ſoil that is grown over them; and which generally lie in regular layers, plainly indicating their having been depoſited in that manner by the rivers gradually receding from them.

Marſhes, and low lands, have been, at different times, and in many countries, drained and banked by art; and gained from the ſea and rivers: And nature ſeems to co-operate with human induſtry: For many meres and lakes are obſerved to diminiſh, and the adjoining land to grow upon them; and marſhes are known to dry up of themſelves, and to become ſound land, even in the memory of man: Agreeably to the prophecy, *I will make the rivers iſlands, and I will dry up the pools* *.

* Iſa. xlvii. 15.

In

In *New England*, it hath been obſerved, That, as they clear the country, a vaſt number of little brooks are loſt, and that this hath affected the river *Connecticut* itſelf; which hath grown diſtinguiſhably ſhallower*.

In *Old England*, the caſe heretofore was much the ſame. Beſides what hath been already obſerved, it is worthy our notice, that when *Severus* made war upon *Britain*, it is repreſented by the hiſtorian, as a marſhy country, eſpecially upon the coaſts, for the paſſing of which marſhes, and the getting of good footing to engage the enemy, the *Romans* were obliged to provide bridges: For that the natives ſwam and waded through them; and fought in them up to their waiſts—And that the vapours ariſing from the marſhes rendered the atmoſphere of the country always thick and cloudy†: Which deſcription, I ſuppoſe, will not be

* Account of European Settlements in *America*, Vol. ii. ch. 8.

† Herodiani Hiſt. lib. iii. cap. 47.

thought

thought to ſuit ſcarce any parts of this iſland at preſent.

It appears from the obſervations of philoſophers, that there is a diminution in the element of water various ways. Sir *Iſaac Newton* obſerves, That vegetation and putrefaction cauſe a diminution of humidity; for that vegetables are nouriſhed by moiſture; and by putrefaction, are turned, in great part, into dry earth; and earthy ſubſtance always ſubſides in fermenting liquors*: And Mr. *Boyle* hath diſcovered by experiments, that water, by repeated diſtillations, is turned into a ſolid earth †.

On the other hand, we ſee a growth, not only in the trees and vegetables, but in the glebe itſelf; in ſtones, minerals,

* Pemb. View of Sir Newton's Philoſophy, p. 245.

† It may likewiſe be queſtioned, Whether all the vapours exhaled by the ſun return to the earth again, either in rain, or otherwiſe; and whether part of them be not rarified into air; as the air is ſuppoſed by ſome to have been tranſmuted into water, for the purpoſe of drowning the world.

and conchous ſubſtances; in the feeding of which, water is chiefly employed: And, in a manner, there is a growth in all the materials of which the world conſiſts; which cannot be maintained but by water. This muſt therefore cauſe an increaſe in the matter of the ſolid parts of the earth, at the expence of the fluid parts; the elements being convertible into each other, the one acquiring what the other loſeth; the former increaſing, in direct proportion, as the latter doth decreaſe: And as this muſt have been the caſe ever ſince the flood, the effects, in ſo long a courſe of time, may now be ſuppoſed very conſiderable.

Accordingly philoſophers have obſerved, that the earth increaſeth in bulk; which is rendered very probable by an obſervation of Dr. *Halley's**: *Linnæus* hath publiſhed an oration, *De telluris habitabilis incremento*; which I have not ſeen. And

* See Pemb. View of Sir Iſaac Newton's Philoſophy, p. 245.

Dr.

Dr. *Plot* went ſo far as to calculate the annual increaſe of the earth. In his Natural Hiſtory of *Staffordſhire*, he ſays, that at the depth of eighteen feet in the earth, there was found a great number of pieces of money, which were the coin of *Edward* IV. two hundred years before; ſo that the ground, which was marſhy, had grown about one foot in eleven years; or one inch and a twelfth part of an inch in a year. Here is a quick growth: But this cannot be held for a general rule, though it may ſerve for ſuch in marſhy lands.

The increaſe of the globe in general may be illuſtrated from what travellers have obſerved concerning ſome of the remaining buildings of old *Rome*. The *Pantheon*, which, when it was built, was aſcended to by eight ſteps, is now deſcended into by as many: Whilſt the foundation of the *Capitol* is ſtill above ground, as it ſtands upon a rock. "But the *Tarpeian* rock itſelf is now of ſo ſmall a fall,

that a man would think it no great matter, for his diverſion, to leap over it*." This is undoubtedly owing to the earth being grown up about it, and fed by the waſhings of the rock, and chiefly by the rubbiſh of the ruined buildings—which is alſo the caſe in London: A proof of which is, That the triumphal arch of *Septimius*, which ſtands at the foot of the *Tarpeian* rock, is now almoſt buried in the earth. The baſis and whole pedeſtal of *Trajan's* pillar is ſunk under ground; or, to ſpeak more properly, the ground is raiſed about it; which is the caſe, more or leſs, of moſt of the other remains of old *Rome*. The walls of it in the lower part of the city have been obſerved to lie, thirty, and forty feet below the ſurface of the earth†.

4. Another barrier againſt the ſea is formed by the vaſt mountains of ice, which the ſeas about the polar regions are choak-

* Bp. Burnet's Letters from Italy, Lett. 3.

† *Ray's* Diſcourſes, p. 51.

ed

ed up with: Where navigators have obſerved, that theſe great ſhoals and floating iſlands of ice are not found but upon the coaſts, and about the mouths of rivers—That on the high ſeas, diſtant from the ſhores, even as far as the north-pole, which ſome have ſailed quite up to, and others within a degree or two of it, there was no ice to be ſeen; but a clear open ſea—But that, as all the mountains of *Frieſland* for inſtance, are covered with ſnow, ſo all the coaſts are lined with ice, which forms ſuch a bulwark, as is not to be approached: And as theſe icy banks are ſeldom, if ever, entirely thawed, they are a perpetual lock upon the ſeas in thoſe parts: And on the other hand, it is not improbable, that they gather and increaſe in bulk; and by degrees are atterrated, and converted into ſolid earth. This is not a groundleſs conjecture: We have an account in the voyages of ſome *Hollanders*, that, having anchored their ſhip at one of theſe banks of ice, and having

climbed up upon it, they obſerved the ſurface of it was covered with earth, and found about forty eggs upon it; and that it was not of the common colour of ice, but a kind of azure, or ſky colour. It was very high, being about eighteen fathom under the water, and ten fathom above it*. If this inſtance be ſufficient to ground a general concluſion upon, here is a great draw-back upon the element of water, and as great an addition to that of earth; and this operation having been continually carrying on ever ſince the deluge, how conſiderable the effect is become by this time is not to be eſtimated. I ſhall only add, that the flatneſs of the globe about the poles is alone ſufficient to prevent the waters collected in thoſe parts from overflowing the earth.

Job's reflection is moſt properly applicable to the ſeas in theſe parts, where alone they are known to be frozen. *The waters are hid with a ſtone, and the face of the deep is frozen* †.

* *Buffon*, p. 78, 135. † *Job* xxxviii. 30.

To

To theſe inſtances of the increaſe of the earth, I ſhall only add one argument more for the decreaſe of the element of water, to thoſe that have been already given. We read of great inundations, which happened in particular countries in antient times; not long after the univerſal deluge: Such as that of *Ogyges* in *Attica*, about 550 years after it; which laid the country waſte to that degree, that it lay uncultivated, and without inhabitants, for almoſt two hundred years. *Deucalion's* flood, in *Theſſaly*, was ſo conſiderable, as to have been confounded with *Noah's* flood by many heathen writers; though it happened 830 years after it: And other partial and local deluges, irruptions, and inundations of the ſeas, are recorded in antient hiſtory *. But we read, or hear of, no ſuch great deluges, or inundations, as theſe ſeem to have been, in later ages, that have happened in any part of the world; though

* See Sir *Walter Raleigh's* Hiſt. of the World, p. 89.

the world in general is better known than it was in thoſe early times. Whence it may be concluded, that there have not been in ſucceeding ages, thoſe quantities of rain and waters, to cauſe ſuch inundations, as happened in antient days.

Upon the whole, ſo many impediments to the return of the deluge, ſerve as ſo many ratifications of God's covenant to *Noah*; and, according to the preſent conſtitution of the world, render ſuch a cataſtrophe abſolutely impoſſible: A conſtitution, which from many of the foregoing inſtances, appears to be very different from that of the antediluvian earth.

CHAP.

CHAP. X.

ON THE POST-DILUVIAN STATE OF THE MOUNTAINS.

THERE is nothing relating to this ſubject in ſcripture, except what may be deduced from ſome few prophetical paſſages; And as theſe are generally underſtood in a metaphorical ſenſe, ſo being gradual and imperceptible in their accompliſhment; few imagine, or perhaps will allow, that they are capable of any other. Let us however examine them.

The moſt remarkable of theſe prophecies is the following. *Every valley ſhall be exalted; and every mountain and hill ſhall be made low: And the crooked ſhall be made ſtraight, and the rough places plain* *. This prophecy is quoted by St. *Luke* †, and ap-

* Iſai. xl. 4. † Luke iii. 5.

plied

plied to the reign of the *Meſſiah*, to which it belongs; importing, in a moral ſenſe, that all obſtacles, impeding the eſtabliſhment of his kingdom, ſhall be removed; and that, when the Goſpel ſhall have its due influence upon the tempers and manners of men, it will be productive of much improvement in them—that the humble ſhall be exalted by it, and the proud debaſed; the perverſe reduced to a better temper, and the rude and ſavage civilized.

This prophecy is in ſubſtance repeated by *Iſaiah* himſelf. *I will make waſte mountains and hills* *, *I will make crooked things ſtraight* †, *I will make all my mountains a way, and my highways ſhall be exalted* ‡.

Though theſe predictions, and ſome others that ſhall be taken notice of hereafter, are

* Iſa. xlii. 15. † Ver. 16.

‡ Ch. xlix. 11. Dr. *Lowth* would tranſlate this laſt place, *My cauſeways ſhall be exalted*; implying a road raiſed with ſtone, in low and marſhy grounds. But this cannot be better expreſſed, than in the common term of *high way*; which ſignifies a way raiſed above the level of the ground every where.

principally to be underſtood, in a moral ſenſe, of the bleſſings of the Goſpel, and the happy effects of Chriſt's kingdom, when he ſhall reign in the hearts and lives of men, meliorating their tempers, and ſoftening and refining their manners: Yet it is not impoſſible, but that they may have their accompliſhment in the literal meaning likewiſe; how ſingular and paradoxical ſoever this notion may ſeem to be—That even inanimate nature ſhall be meliorated under the reign of the *Meſſiah*—that the outward face of the earth ſhall be improved—the mountains gradually lowered; and the vallies raiſed; and the ſurface of the earth reduced nearer to a level; and laid out in a more regular and beautiful manner, than it before appeared in.

There are ſome appearances in nature, that ſeem to favour this notion; and which have a tendency, a remote one at leaſt, towards this end; and a gradual, however ſlow, working, towards the accompliſhment of the prophecy in this ſenſe.

Naturaliſts

Naturaliſts are generally agreed, that the mountains are lowering, and do ſubſide; for which a concurrence of various cauſes may be aſſigned.

1. By the clouds breaking upon them, the rain falling, and miſt drizzling down their ſides, the ſoil is waſhed away; every ſhower carrying down ſome part of it.

2. The ſprings, working their way through the veins of the earth and clefts of the rocks; and, collecting themſelves into brooks and rivers, are conſtantly bringing down new acceſſion of matter into the vallies; by which they are raiſed, as the hills are lowered.

3. Large collections of water, contained in the caverns of hills, are known to have ſo looſened the foundations of them, as to occaſion their falling; of which we ſhall ſee ſeveral inſtances preſently: And fire generated in their bowels, and diſcharging the contents of them in *Volcanoes*, muſt neceſſarily conſume even thoſe mountains which they have raiſed; and in time cauſe the

ſinking

ſinking of them, though not inſtantaneouſly, yet by imperceptible degrees.

4. Large heaps of ſtones, and fragments of rocks, are in many places thrown down by ſtorms, hurricanes, and earthquakes; and ſometimes, without any additional cauſe, tumble down by their own weight. Veſtiges of this kind may be ſeen in many places at the bottom of hills; in the *Alps*, *Switzerland*, *Wales*, and other mountainous countries. Inſtances of this ſort are given us by ſeveral writers of travels, and natural hiſtory.

Biſhop *Burnet* informs us, that about 500 years ago, the town of *Chavennes* in *Italy* was quite buried by a ſlice of the *Alps*, which came down upon it; and occaſioned the building of a new town ſouth of the former.

He acquaints us likewiſe, that the town of *Pleurs*, about a league from *Chavennes*, met with the ſame fate, in the year 1618; the mountain having been obſerved to cleave, at length fell down, and buried the town, and

and all the inhabitants, conſiſting of about 2200 perſons, not one eſcaping; though forewarned of the deſtruction impending over them. *Chavennes* was twice as large as *Pleurs*. He farther ſays, that the ſlices from the hills frequently fall down, and extremely fatten the ground which they cover; ſo that it becomes fruitful beyond expreſſion *.

In *June* 1714, part of the mountain of *Diablere* in *Valais*, fell ſuddenly, about two or three o'clock in the afternoon, when the ſky was very clear: It was of a conical figure †. It deſtroyed fifty-five cottages; killed fifteen perſons, above a hundred head of cattle; a great number of ſheep, and covered with its rubbiſh a full ſquare league. Its duſt greatly darkened the air; and the heap of ſtones which fell from it was thirty perches, of ten foot each in height; which pounded up the water to that degree, as to

* Biſhop *Burnet's* ſecond letter from *Italy*.

† This is the figure of thoſe mountains, which Sir *W. Hamilton* decides to have been raiſed by eruptions of fire. Obſ. on *Veſuvius*, &c. p. 77.

form

form new lakes of a great depth. The baſe of this great rock appeared to be rotten, and reduced to duſt*.

There is a remarkable inſtance of this ſinking of mountains near *Folkſtone* in *Kent*, where a whole range of hills is inſenſibly fallen, without any earthquake. They conſiſt of ſtone and chalk; and by their ſinking have caſt rocks and earth into the neighbouring ſea. A well-atteſted account of this matter is to be ſeen in the Philoſophical Tranſactions †.

In 1678, there was a great inundation in *Gaſcogny*, which was cauſed by the ſinking of ſome pieces of mountains in the *Pyrenees*; which forced out the waters that were contained in the caverns under them. In 1680, there happened ſtill a greater inundation in *Ireland*, from the ſinking of a mountain into its caverns, which, it ſeems, were full of water ‡.

* M. *Buffon*, p. 200, from the Hiſt. of the Academy of Sciences.

† *Buffon*, ib. from *Phil. Tranſ.* abr. Vol. IV. p. 250.

‡ M. *Buffon*, ib. p. 201.

With

With regard to the ſtate of the mountains in *Wales*, I ſhall make uſe of ſome remarks of Mr. *Edward Lhwyd*, a diligent obſerver of nature, particularly in his native country; which I find in a letter of his to Mr. *Ray*.

Firſt, he obſerves, that generally the higher the hills are, the more ſteep are their precipices and declivities; and he inſtances in ſome out of twenty, he ſays, that might be named, reputed the high hills in *Wales*; which had the ſteepeſt rocks of any mountains he had ſeen; and that not only in their higheſt cliffs, but alſo in moſt of their other craggs; till you deſcend to their lower valleys. This, ſays he, I can aſcribe to nothing elſe, but the rains and ſnow, which fall on thoſe great mountains, I think, in ten times the quantity they do in the lower hills and valleys; by which their ſides are bared to the naked rocks, which lay under them.

2. I have obſerved, ſays he, a conſiderable quantity of the chips, or parings, if I may ſo call them, of theſe cliffs to lie in vaſt

vaſt heaps at the roots of them; and theſe are of ſeveral ſorts and materials—and are ſometimes compoſed of huge ſtones, from an hundred pounds weight to ſeveral tuns.

3. In the valleys of *Lhanberis*, and *Nant-Phrancon*, in *Carnarvonſhire*, the people find it neceſſary to rid their grounds often of the ſtones, which the mountain-floods bring down; and yet, notwithſtanding this care, they often loſe conſiderable parcels of land.

4. I affirm, ſays he, that by this means, not only ſuch mountains as conſiſt of much earth, and ſmall ſtones, or of ſofter rocks, and ſuch as are more eaſily diſſoluble, are thus waſted; but alſo the hardeſt rocks in *Wales*; and they ſeem to be as weighty, and of as firm and cloſe a texture, as marble itſelf. As an inſtance of which he relates, that in the valley of *Nant-Phrancon*, in the year 1685, part of a rock of one of the impendent cliffs became ſo undermined, doubtleſs by the continual rains, and ſubterraneous veins of water occaſioned by them; that, loſing its hold, it fell down in

ſeveral pieces; and, in its paſſage down a ſteep and craggy cliff, diſlodged thouſands of other ſtones; whereof many were intercepted, ere they came down into the valley; but as much came down, as ruined a ſmall piece of ground; and ſeveral ſtones were ſcattered at leaſt two hundred yards aſunder. In this accident, one great ſtone, the biggeſt remaining piece of the broken rock, made ſuch a trench in its deſcent, as the ſmall mountain-rills commonly run in; and when it came down to the plain ground, it continued its paſſage through a ſmall meadow, and a conſiderable brook; and lodged itſelf on the other ſide of it. From hence, ſays he, I gather, that all the other vaſt ſtones, that lie in our mountainous valleys, have, by ſuch accidents as this, fallen down; unleſs perhaps, as he very juſtly obſerves, we may do better to refer the greateſt part of them to the univerſal deluge.

He farther obſerves, and I have obſerved the like myſelf elſewhere, that on the higheſt

higheſt part of the *Glyder*, a very high mountain in *Wales*, there are prodigious heaps of ſtones, many of the largeneſs of *Stonehenge*, but of all the irregular ſhapes imaginable; all lying in as much confuſion as the ruins of a building can be ſuppoſed to do: Which he can account for no otherwiſe, than that they are the ſkeleton of the hill, expoſed to open view by rains and ſnow beating upon them, and waſhing off the ſoil from them. But how they came to lie acroſs each other in ſuch confuſion, on the very ſummit of the hill, and as irregularly as thoſe ſtones lie which have fallen down to the valleys, ſeemed to him the ſtrangeſt thing of all, and perfectly unaccountable. But I ſee no difficulty in accounting for all this, on ſuppoſition that theſe ſtones were thrown out of the top of this hill by the force of an earthquake; and ſince laid bare in the manner they appear, by the waters of the deluge, and by ſucceeding rains and tempeſts.

One other obſervation he adds, for its ſingularity, on an appearance, which in

ſome reſpects, he ſays, is oppoſite to the former—That on the north-weſt ſide of the ſame hill, *Glyder*, there is, among many others, one naked precipice, as ſteep as any he had ſeen; but ſo adorned with numerous equi-diſtant pillars; and theſe again ſlightly croſſed at certain joints; that ſhould Dr. *Burnet*, ſays he, ſee it, I believe he would ſay it is one ſmall pattern of the frame of the antediluvian earth. I muſt, as he adds, confeſs, I admired it almoſt as much, as he doth his precipice by the *Mediterranean* ſea: To which, after a long encomium, he ſays, *Vale, auguſta ſedes, rege digna**. And why might not the original frame of the earth have been left undiſturbed in ſome inſtances, as ſpecimens of the regularity and order in which the whole was at firſt conſtructed? And in what better light can the ruins abovementioned, which ſo much reſemble the ruins of a building, be looked upon, than as the ruins of the building of the world?

* See Mr. *Lhwyd's* letter to Mr. *Ray*, in Mr. *Ray's* Philoſophical Letters, p. 253.

Before

Before we leave this country, I cannot omit mentioning a caſe within my own knowledge, relating to the ſubject we are upon: It is that of certain places, lying cloſe under the north ſide of high hills; on which the ſun formerly, within memory, did not ſhine till many hours after ſun-riſe; and in ſome places not at all, during the winter months: Yet it now appears in thoſe places much earlier in the day; and throughout the whole year.

The town of *Corwen* in *Merionethſhire*, for inſtance, lies under a ſteep high rock, on the north ſide of *Berwin* mountain. The inhabitants relate, that within the memory of many of them, the ſun at the winter ſolſtice, made his firſt appearance on the ſteeple about ten, or eleven o'clock; which uſed to ſerve them as an index of time, and ſo far to anſwer the end of a ſun-dial. But the ſun is now known to ſhine, both on ſteeple and church, much earlier in the morning.

How theſe variations are to be accounted for, I know not, otherwiſe than from the

lowering of the hill; which permits the ſun to appear ſooner over it.

Take two inſtances more, in our own country, from Mr. *Ray*, of hills, which have in fact ſunk, or ſubſided perpendicularly in the ſame manner. "I have been informed, ſays he, by a gentleman of good credit; that whereas the ſteeple of *Craich*, in the peak of *Derbyſhire*, in the memory of ſome old men then living, 1672, could not have been ſeen from a certain hill, lying between *Hopton* and *Wirkſworth*; now, not only the ſteeple, but a great part of the body of the church, may from thence be ſeen: Which comes to paſs by the ſinking of a hill between the church and place of view. A parallel example whereto the learned Dr. *Plot* gives us, in a hill between *Sibbertoft* and *Haſleby* in *Northamptonſhire*. And thus will they continue to do, as long as there falls any rain, and they retain their declivity; that is, till they be leveled with the plains*."

* Mr. *Ray's* Philoſophical Diſcourſes, p. 44. Dr. *Plot's* Nat. Hiſt. of *Staffordſhire*, p. 113.

But

But I apprehend that the ſinking of theſe two hills, if this was really the caſe, with regard to both of them, thus perpendicularly downwards, whilſt thoſe on each ſide of them kept their ground, and continued of much the ſame height, was more owing to ſome ſubterraneous cauſe, than to rains; which they were all equally liable to, and would be affected by, the one nearly as much as the other.

Mr. *Morton*, in his Natural Hiſtory of *Northamptonſhire*, hath ſhewn from experiments which he made on the hill near *Sibbertoft*, that the rains made but a very ſmall decrement in it: Nor could it be much reduced in height, from the form of it; having, according to his deſcription, a pretty broad plain at the top. He indeed contradicts Dr. *Plot's* account of the ſinking of this hill, and abſolutely denies the fact *. But it is poſſible it might have been ſunk from other cauſes, beſides rain, when the

* His words are, "all the parts of this relation I have diligently enquired into, and examined; and find it is all over a miſtake," p. 91.

neighbouring hills were not: And by the time he came to make his obſervations, they might likewiſe have been lowered proportionably: And thus both accounts may be reconciled. For I am loth to countenance the controverting of the truth of facts, that ſeem to be well atteſted.

Even by Mr. *Morton's* own account, about two yards of the ſteeple was to be ſeen in his time: But according to Dr. *Plot's* information, which is not diſproved, no part of it was viſible eighty years before: And a ſinking of two yards, in that ſpace of time, is conſiderable.

From theſe and many other inſtances, we find reaſon to conclude, there are greater alterations in the face of the earth than is generally imagined.

Blancanus mentions facts of public notoriety in his time, which prove the ſinking of mountains; from ſeveral villages and caſtles being viſible from places whence they could not be ſeen in former times*. Slips of earth on declivities,

* M. Buffon, Art. xviii. init.

where

where it is of a looſe contexture, are common in moſt countries: And the waſting, and falling, and deterration of banks of rivers, are the conſtant and neceſſary effects of the water, which corrodes them. Thus, to uſe *Job's* reflection, *Surely, the mountain falling cometh to nought, and the rock is removed out of his place. The waters wear the ſtones: Thou waſheſt away the things which grow out of the duſt of the earth.**.

Take a few inſtances more. *Solway* moſs, in the county of *Cumberland*, began to diſcharge its contents, November 15, 1771, at night; by which means a level on the top of a hill is become a valley; which, from a continuance of the flow, continued to ſink for ſome time, if it doth not do ſo ſtill; the grounds below being raiſed proportionably. Inſtances of this kind, though not ſo conſiderable, I have been informed, are not uncommon in thoſe parts.

* Job xiv. 18, 19.

Near

Near a village in *Nedar-Ulm*, in the environs of *Manheim*, a mountain ſunk more than 20 feet below the ſurface of the land that ſurrounded it. The top, which was covered with vine-trees, was thrown into the valley below, more than 100 paces off; which was raiſed in proportion, by which at leaſt 15 acres of vineyard was ruined.

This extraordinary event, which happened in February 1772, the earth continuing ſome time in motion, is ſuppoſed to have been cauſed partly by the ſubterranean waters, and partly by thoſe which deſcend, in great quantities, from the mountain *Klopberg*; and probably the great rains, which have fallen for ſeveral years paſt, have contributed to it *.

But all theſe are only trifling inſtances, in compariſon of the following. "*Fournier*, ſays Dr. *Burnett*, gives an account of an earthquake in *Peru*, the ſame, I ſuppoſe, with that taken notice of, Ch.

* The public papers.

IV,

IV. p. 158, from *Kircher*, that reached 300 leagues along the ſea-ſhore, and 70 leagues inland, and leveled the mountains all along as it went; threw down the cities; turned the rivers out of their channels, and made an univerſal havock and confuſion. And all this, he ſaith, was done within the ſpace of ſeven or eight minutes *."

The ſtrong mountains, in compariſon of this force, are but *a very little thing*; and being *weighed in this ſcale, they are but as the ſmall duſt of the balance* †.

That there are internal cauſes of the ſinking of mountains, is not only probable, but even certain, from many of the facts above-mentioned. And if they have been raiſed by earthquakes, they muſt have correſponding cavities under them. Such are thoſe caverns, which appear near the ſurface, in *Derbyſhire*, at *Caſtleton*, and

* Dr. *Burnett's* Theory of the Earth, Book I. chap. ix. p. 82.

† Iſai. xl. 12, 15.

Pool's

Pool's-hole, and elſewhere: Not to mention many other ſuch, or greater, of which we have accounts, in foreign countries. Theſe cavities are either filled with water, which waſhes the ſides of them, and by degrees undermines them: When at length they fall in; in conſequence of which the incloſed waters are forced out in ſome ſuch manner as hath been related to have happened in the above inſtances, Ch. V. Or elſe they generate ſulphureous and nitrous particles, which, kindling into ſubterraneous fire, prey upon their bowels, and ſometimes ſhake their frame by earthquakes; or diſcharge themſelves in exploſions and volcanoes; and otherwiſe exhauſt the matter of them, and reduce them both in bulk and height. And all mountains, being hollowed underneath, muſt, by the laws of gravity, have a tendency to ſink downwards; and in proceſs of time muſt, by their own weight, fall into the beds out of which they were originally raiſed.

From

From theſe obſervations we are led to conclude, that it is poſſible, if not probable, that, in a courſe of ages, the mountains and vallies may be brought nearer to an equality with each other; there being, from the co-operation of ſo many cauſes, a tendency in nature to this end; without any thing to oppoſe or counter-act it. The only objection that occurs to me is, that in this caſe, it may be thought the earth would be in danger of being overflown by the ſea: And the poſſibility of this conſequence hath been alledged. But there is no ſuch dead level of the earth ſuppoſed, that there would not be eminencies and inequalities enough left, to keep out the return of the ſea; as there were, when the dry land was firſt ſeparated from the water. But if there be a decreaſe in the element of water, that decreaſe may be ſuppoſed to bear a conſtant *ratio* to the ſubſiding of the hills: So that there cannot, in that caſe, be any grounds for apprehending the earth would be overflown by it;

it: And if there be an increaſe in the bulk of the earth, for which ſome arguments have been offered, that increaſe muſt be in the moſt depreſſed and fertile parts of it; which, as it will raiſe them nearer to a level with ſuch as are mountainous, ſo it will advance them the more above high-water mark.

There being therefore ſo many natural cauſes, which concur towards bringing the ſurface of the earth nearer to a level; this renders it poſſible, at leaſt, that the prophecy, which foretels, *That every valley ſhall be exalted, and every mountain and hill ſhall be made low*, may be fulfilled in the literal ſenſe; if we do not think it probable likewiſe.

This conſideration ſhould at leaſt reſtrain us from raſhly rejecting the ſcripture philoſophy. On the contrary, it ſhould diſpoſe us to receive it with veneration, and to adore the deep penetration of that wiſdom, by which ſuch wonderful events have been foretold; as well as the no leſs wonderful

wonderful and ſecret workings of that power, which, by ſo many various means, is employed in bringing them to paſs: There being none other than the Author of nature, who could reveal theſe ſecrets of nature, or who could carry on the deſigns of them, and execute the mighty plan formed for their accompliſhment.

I intimated there were ſome other paſſages of ſcripture which foretold, or alluded to, the ſinking of the mountains, and raiſing of the valleys. In the prophet *Zechariah*, we read, *Who art thou, O great mountain? Before Zerubbabel thou ſhalt become a plain* *. Though this is primarily to be underſtood of the removal of all obſtructions to the rebuilding of the temple of *Jeruſalem*, and of the overcoming of all difficulties in reſtoring the *Jewiſh* worſhip: Yet as *Zerubbabel* was a type of the *Meſſiah*; as was the Jewiſh, of the Chriſtian worſhip; nothing hinders but that theſe words may have a diſtant alluſion to the

* Zech. iv. 7.

leveling

leveling of mountains, in the literal ſenſe, as one of the diſtinguiſhing characters attending the final eſtabliſhment of Chriſt's kingdom, impreſſed upon the material creation. This is more plainly intimated by the ſame inſpired writer elſewhere: That the time will come, when, *the Lord ſhall be king over all the earth: In that day ſhall there be one Lord, and his name one.* And then, *all the land ſhall be turned as a plain, from* Geba *to* Rimmon, *ſouth of* Jeruſalem: *And it ſhall be lifted up, and inhabited in her place* *. I ſhall offer no other comment on theſe words, than that of Dr. *Lowth.* "The mountains about *Jeruſalem* ſhall be leveled, perhaps by the earthquake before-mentioned; from *Geba* northward, to *Rimmon*, ſouthward of *Jeruſalem.* The expreſſions may ſignify, that all impediments ſhall be removed, that oppoſe the advancement of Chriſt's kingdom. And the mountains that obſtructed the proſpect of *Jeruſalem* being removed, the city ſhall be

* Zech. xiv. 9, 10.

ſeen

ſeen by paſſengers afar off; like the city ſet on an hill, to which the church is compared, *Matt.* v. 14. And it ſhall be inhabited as formerly." The earthquake here referred to is mentioned, ver. 4, 5, of this chapter. *And the mount of olives ſhall cleave in the midſt thereof towards the eaſt, and towards the weſt; and there ſhall be a very great valley between: And half of the mountain ſhall remove toward the north, and half of it toward the ſouth.* I ſhall follow the LXX. and *Chaldee*, in the tranſlation of the next verſe, which is approved by Dr. *Lowth*; and is tranſlated in the ſame ſenſe by the *Arabic* likewiſe. *The valley of my mountains ſhall be filled up; for the valley of the mountains ſhall join, or touch, even to Azal: It ſhall even be filled up, as it was filled by the earthquake in the days of Uzziah.* *Joſephus* writes, "that upon that earthquake, the mountain before *Jeruſalem*, that is, mount *Olivet*, cleft on the weſt ſide; and then removed for about half a mile toward the eaſt part

of the hill, and there ſtopt *." A very extraordinary effect of an earthquake this! But not more ſo than what we hear related concerning ſome others. As the mountains were raiſed by earthquakes; poſſibly earthquakes may, among other means, operate towards the lowering of them; as in ſome inſtances we have ſeen they have done †.

I ſhall ſubjoin one other part of the context, as it contains a diſtinguiſhing charac-

* *Lowth* in loc. Joſ. Antiq. lib. ix. cap. xi. Sir *R. L' Eſtrange's* tranſlation runs thus; for I have not the original by me. "There was a place at ſome diſtance weſtward from the town, that they called *Etges*; where, by an earthquake, one half of a great mountain was torn from the other; and after it had rolled over and over, a matter of four furlongs, it ſtopt in the concluſion, upon the eaſt ſide of a mountain, over againſt it; having choaked up the highway, and covered the king's gardens all over with rubbiſh.

† Take another, which happened very lately. "In *Auguſt* 1771, an earthquake happened in the valley of *Magna* in *Italy*, which threw down part of a mountain; by which great miſchief was done to the neighbouring villages. Near the ſame ſpot a large opening was made in the ground; from which a great quantity o water iſſued." Publick papers.

ter

ter of the *Meſſiah's* reign, according to Dr. *Lowth's* judicious comment upon it.—*And men ſhall dwell in it (Jeruſalem), and there ſhall be no more utter deſtruction;* ver. 11. "The latter part of the ſentence may be tranſlated, *There ſhall be no more curſe.* In the new ſtate of things here foretold, the curſe which ſin brought into the world ſhall be removed. The ſame words are repeated by St. *John*, *Rev.* xxii. 3, and ſeem to be taken from this place." חרם is doubtleſs properly tranſlated by *curſe.*

There is yet another paſſage of ſcripture, which foretels the filling up of the valleys, and the depreſſing of the hills. Is in the 65th pſalm; for the better illuſtration of which, I ſhall here offer a comment on the whole pſalm.

This pſalm is generally underſtood as a prophecy concerning the Lord Chriſt; and concerning him alone. For none other but he can be ſaid to ſit in a ſtate of majeſty on God's right hand: Nor was there any prieſt of the order of *Melchizedek*, that could be a ſhadow of him. Biſhop *Patrick*

informs us, that many of the *Jews* themſelves have been forced to acknowledge that this pſalm belongs to Chriſt: And it certainly contains a very plain prediction of his divinity; his royal dignity, his prieſthood, his victories and triumphs; and other mighty effects of his power, and beneficial fruits of his reign.

The Lord ſaid unto my Lord, Sit thou at my right hand, until I make thine enemies thy footſtool.

Our Saviour himſelf comments on this text, *Matt.* xxii. 42. where he obſerves, that *David* in the ſpirit calls Chriſt Lord: We cannot therefore be miſtaken in our application of this pſalm to him. This verſe imports, that, on his exaltation into heaven, he ſhould be ſeated in the higheſt place of dignity and glory, on the right hand of the Father; while thoſe his enemies, who treated him ſo injuriouſly upon earth, and oppoſed the eſtabliſhment of his kingdom, ſhould be overcome and reduced to a ſtate of the moſt abſolute ſubjection to him.

Ver. 2.

Ver. 2. *The Lord ſhall ſend the rod of thy ſtrength out of Sion: Rule thou in the midſt of thine enemies.*

Thy ſceptre ſhall be firſt ſwayed in Sion; from whence thy empire ſhall be extended over all the earth; and ſhall triumph over all infidels, idolaters, and other impious and wicked men of all denominations; who are the great enemies of thy perſon and government: In the midſt of whom it ſhall notwithſtanding be eſtabliſhed.

Ver. 3. *Thou ſhalt make thy people free in the day of thy power, in the beauty of holineſs: Thy birth ſhall proceed from an youthful womb.*

Thus I tranſlate this difficult verſe: Whether with better ſucceſs than others, who have attempted it, the reader will judge. This is certain, that every view, which it hath hitherto been preſented in, leaves the ſenſe perplext and imperfect; and makes the ſentence uncouth, and ungrammatical.

עמך נדבת—Theſe words, in our old tranſlation, are rendered paraphraſtically—

The people ſhall offer thee free-will offerings. In the latter verſion, *thy people ſhall be willing*—But if נדבת be underſtood as a feminine plural, as it generally is, it can never, in any view, ſtand in proper grammatical conſtruction with עמך, a maſculine ſingular. Therefore, to make grammar of theſe two words; and to give them a clear, eaſy, and complete meaning, I conceive נדבת ſhould be tranſlated as a verb, of the ſecond perſon, ſingular, from נדב, to offer freely, or make free—*Thou ſhalt enfranchiſe thy people*, or make them free. And that Chriſt hath full power and authority to confer this privilege, he himſelf aſſures us, *If the ſon ſhall make you free, you ſhall be free indeed**. The latter member of this verſe is rendered in our verſions—*The dew of thy birth is of the womb of the morning*—*In the beauties of holineſs, from the womb of the morning: Thou haſt the dew of thy youth.* Here are odd ideas as oddly connected together. What the dew hath to do with birth,

* John viii. 36.

or

or youth; or the womb with the morning, is not eaſy to ſay. No wonder, therefore, learned men are diſſatisfied with theſe tranſlations, and endeavour to correct them. There is not a verb in this whole verſe, according to the common acceptation of it. I have found one; and I think it will appear there is another in it. For I take טל to be a verb, from the *Chaldee* נטל, *to proceed*; and I have tranſlated accordingly—*From an early, or youthful womb ſhall thy birth proceed:* Alluding to the womb of the virgin. משחר, and שחרות, both ſignify youth; and the latter word is joined with ילדות, childhood, *childhood and youth are vanity* *. משחר therefore, in the place before us, may ſignify youthful, or early; the ſubſtantive being uſed adjectively, as it often is in the *Hebrew* †.

* Eccleſ. xi. 10.

† *Schindler* tranſlates this paſſage thus. *A die, quo exiviſti ex matrice, et ab illa aurorâ, proſperaſti puericiam tuam:* Where he ſuppoſes טל to be a verb. In voce רחם. But where he found this ſenſe for it, I know not.

Ver. 4. *The Lord hath ſworn, and will not repent, Thou art a prieſt for ever, after the order of Melchizedek.*

Theſe words are plain, and admit of no doubt. Chriſt alone was a prieſt after the order of *Melchiſedeck:* And a king too, like him; *King of righteouſneſs, and king of peace—without father,* according to the fleſh; *and without mother,* with regard to his divine nature*; *without deſcent* likewiſe, in that reſpect; *having neither beginning of days, nor end of life.* For theſe characters, ſtrictly ſpeaking, belong only to the ſon of God; of whom *Melchiſedeck* was a type, and *who* alone *abideth a prieſt continually* †.

Ver. 5. *The Lord at thy right hand ſhall ſtrike through or ſmite kings, in the day of his wrath.* This verſe is plain likewiſe, and needs no comment ‡.

* Sine patre dicitur ſecundum carnem; ſine matre dicitur ſecundum Deum. Hieron. in Pſ. cx.

† Heb. vii. 2, 3.

‡ It is addreſſed to God the Father; and God the Son, is predicated of in this, and the remaining verſes of the pſalm.

6. *He*

6. *He ſhall judge among the heathen: He ſhall fill up the valleys: He ſhall ſmite off the ſummits of many countries.*

Our tranſlation here renders, *He ſhall fill the places with the dead bodies.*—The original yields no commodious or perfect ſenſe, nor conveys any pleaſing or natural idea, according to this interpretation. There is nothing in it to anſwer *places*. The literal tranſlation is, *He ſhall fill bodies*; which it is difficult to make any thing of: Take them either for living bodies, or dead carcaſes, and fill up the ſentence as you pleaſe.

But ſuppoſe גויות to ſignify *valleys*, and tranſlate, *He ſhall fill up the valleys*—This will be parallel in ſenſe to that place in *Iſaiah*—*Every valley ſhall be exalted:* And likewiſe to a paſſage in *Ezekiel*, in ſenſe and expreſſion too—*I will fill the valleys with their height* *. But, according to the

* Ezek. xxxii. 5. מלאתי הגאיות רמותך. Comp. Ezek. xxxviii. 20.—*The mountains ſhall be thrown down, and the ſteep places ſhall fall, and every wall ſhall fall to the ground.*

other

other rendering, it hath no parallel in any part of Scripture.

That נויות is capable of this ſenſe, will, perhaps, be admitted, if it be conſidered that ſome ſo tranſlate; ſuppoſing נויות to be the ſame with נייות, or נאיות, changing the א, or י into ו, as is commonly done *. Though I ſhould think no change requiſite, only reading נויא in the ſingular number; as I ſuppoſe it might at firſt have been written: Inſtead of which, the word came to be contracted ſometimes into נוש; but oftner into נוא †. For I am convinced, from

* *Capellus* ſaith, that *St. Jerom*, in his Latin tranſlation, done from the *Hebrew*, rendered, *implevit valles*, reading נאיות. Crit. Sacr. lib. ix. p. 367. Though I think he is miſtaken; for *St. Jerom* upon the place, follows the Vulgate, or old Latin tranſlation, and renders *implebit ruinas*; which gives a good ſenſe. But *Buxtorf* reads, *implebit valles*. Vide *Poli Synopſ.* in loc. נוו, in the Arabic, ſignifies a hollow, *depreſſior terræ locus*, from ﻭﻱ. Caſtel.

† From the plural נאיות it ſhould ſeem, that it was ſometimes likewiſe written נאי in the ſingular, though it is not to be met with in that form at preſent.

numberleſs

numberleſs inſtances that might be given, that the words in general in the *Hebrew* language were originally written much fuller than they are at preſent.—That they were afterwards contracted, by leaving out the *matres lectionis*, for expedition, by a people, each of whom was obliged to write out one copy of the law, at leaſt, for his own uſe: And this method cauſing obſcurity, the *maſoretical* points were added by degrees, to clear up, and aſcertain the ſenſe. It was for reſtraining the liberty taken in this reſpect, leſt it ſhould grow to ſuch a degree, as to endanger the purity of the text, that it was found, as it ſhould ſeem, neceſſary to inhibit the farther practice of it, with that ſtrictneſs and ſeverity, as became in the event productive of the contrary extreme, of paying a moſt ſcrupulous and ſuperſtitious regard to every jot and tittle of the ſacred writings; which became a providential means of conſerving them from any attempts to corrupt, or tamper with them; at leaſt for many

ages; till ſuch times as they became more generally known; as they were after the commencement of the goſpel-age, when they were read and ſtudied by the Chriſtians; by which means any deſigns to corrupt them became more and more impracticable. But be that as it may,

To return: If we now tranſlate, *He ſhall fill the vallies*; then follows properly, and in ſuitable connection, *He ſhall beat down the heads*, or tops of the mountains, impending *over wide regions*, or the wide world in general. ראש ſignifies the head, or ſummit of any thing*, and it is frequently uſed for the top of a hill.

Thus, *Come up in the morning unto mount Sinai, and preſent thyſelf there to me,* אלי שם על ראש ההר, *on the top of the hill* †. So again, *The habitations of the ſhepherds ſhall mourn, and* יבשו ראש הכרמל, *the top of Carmel ſhall wither* ‡.

* ראש, ſummitas cujuſlibet rei, cacumen, vertex. Schind.

† Exod. xxxiv. 2.

‡ Amos. i. 2. Comp. 2 Sam. xv. 32—xvi. 1.

7. He

7. *He ſhall drink of the brook in the way: And therefore ſhall he lift up the head.*

Water is a metaphor for grace in ſcripture-language: And the holy Spirit, and his graces, are often repreſented by the ſymbol of water. *Thou ſhalt be like a watered garden**. *Their ſoul ſhall be as a watered garden*†. *I will pour out my ſpirit*‡. *I will pour water upon him that is thirſty: and floods upon the dry ground: I will pour my ſpirit upon thy ſeed; and my bleſſing upon thine offspring* §. But which is yet more to the point, *Whoſoever drinketh of the water that I ſhall give him, ſhall never thirſt* ‖; that is, the water of the ſpirit. *He that believeth on me, out of his belly ſhall flow rivers of living water—This ſpake he of the ſpirit* **. And to mention no more, we

* Iſai. lviii. 11.
† Jer. xxxi. 12.
‡ Joel ii. 28.
§ Iſa. xliv. 3.
‖ John iv. 14.
** John vii. 38, 39. Comp. Iſa. xii. 3.

are

are ſaid to be baptized with the Holy Ghoſt, as with water. Therefore I underſtand his drinking of the brook in the way, of his imbibing the graces of the Holy Spirit, in the courſe of his miniſtry: Which having ſucceſsfully performed, *he ſhall lift up his head*, and be exalted to his royal and prieſtly dignity in the heavens.

This I take to be the plain meaning of this pſalm, which hath ſo much perplexed interpreters; and particularly of that part of it, which relates to the preſent ſubject.

This notion concerning the lowering of the mountains, and the raiſing of the vallies, grounded upon the literal ſenſe of the foregoing prophecies, will be allowed to receive ſome countenance from certain antient traditions, which muſt have taken their riſe from theſe prophecies; or from ſome original of antient date.

There is a paſſage in the book of *Baruch*, which may be looked upon as an early comment on the prophecy of *Iſaiah*.

God

*God hath appointed that every high hill, and banks of long continuance, ſhould be caſt down, and valleys filled up, to make even the ground, that Iſrael may go ſafely in the glory of God**. The words are plain, and the notion would not have been advanced without ſome grounds for it. The *Jews* expect the fulfilling of this promiſe, in its literal ſenſe, when they return from their diſperſion, to facilitate their paſſage into the holy land. This is agreeable to an idle tradition which they have, grounded upon the ſame general notion, That, among other inſtances of an extraordinary providence, a cloud went before their forefathers in the wilderneſs, three days journey, to level the hills, and fill up the valleys before them †.

There is a paſſage of the ſame import in the *Sibylline* oracles, which ſignifies, that, previous to the diſſolution of all

* Baruch v. 7.

† *Targum* in Canticles ii. 6.

things,

things, and the laſt judgment, the mountains ſhall be thrown down, and the valleys raiſed, and both be reduced to an equality. The words, as preſerved by St. *Auſtin*, are—

Dejiciet colles, valles extollet ab imo;
Non erit in rebus hominum ſublime, vel altum.
Jam æquantur campis montes, et cærula ponti.
Omnia ceſſabunt; tellus confracta peribit *.

This oracle is better preſerved in the *Greek* by *Euſebius*, of which the Latin is a bad tranſlation; as St. *Auſtin* in a manner acknowledges †:

Ὑψωσει δε φαραγγας, ολει δ' ὑψωμενα ἑκαστα.
Ὑψος δ' εκ ἑι λυπρον εν ανθρωποισι φανειται.
Ισα τ' ορη πεδιοις εσαι, και πασα θαλασσα
Ουκ εις πλειν ἡξει, γηγαρ φρυχθησα κεραυνῳ, κ. τ. λ. ‡

The ſecond verſe may be taken both in the literal and moral ſenſe—That there

* *Aug.* de civ. Dei, lib. xviii. cap. 23.

† In his Latinis verſibus de Græco utcunque tranſlatis.

‡ *Euſeb.* in Λογῳ βασιλικῳ, cap. xviii.

ſhall be no wearisome heights, nor dangerous precipices: Or, that there ſhall be ſuch an equality among men, as will deſtroy all invidious diſtinctions of rank and fortune; and all ſuch ſuperiorities of place and power, as will be oppreſſive, or injurious, to thoſe of inferior degree, and condition.

The antient heathens had another tradition of the like import, whether borrowed in part from the foregoing prophecy of *Iſaiah*; or however elſe they came by it, "That the time would come, decreed by fate, when the earth would be reduced to an even plain, and mankind ſhould all live under one happy polity; and be all of one language," Επειτα δε χρονῳ ειμαρμενῳ, εν ᾧ της γης επιπεδε και ὁμαλης γενομενης, ἑνα βιον, και μιαν πολιτειαν ανθρωπων μακαριων, και ὁμοϊλωσσων ἁπαντων γενεσθαι. Plut. de Iſide.

The certainty of the divine purpoſe is ſtrongly expreſſed in the ſtile of the heathen mythology; in which the time pre-

fixed for its accompliſhment is called χρονος ειμαρμενος. The wiſe heathens meant no more by fate, than that chain of cauſes, fixt in the divine counſel and decree; which produced their effects by neceſſary conſequence. It is farther obſervable, that this latter part of the tradition, concerning all mankind being of one language, is agreeable to another antient prophecy, *Then will I turn to the people a pure language, that they may all call upon the name of the Lord, to ſerve him with one conſent* *. It is agreeable likewiſe to the Moſaical account, that *all the earth was of one language, and one ſpeech*, before the confuſion of tongues; which both prophecy and tradition promiſe a reſtoratio of.

But to return to *Iſaiah's* prophecy, with which we ſet out: We have ſeen what may be offered in ſupport of the former part of it in the literal ſenſe. *Every val-*

* Zeph. iii. 9.

ley

ley ſhall be exalted; and every mountain and hill ſhall be made low. There are ſome appearances, which have a tendency towards fulfilling the latter part of it, in the literal ſenſe likewiſe—*The crooked ſhall be made ſtraight, and the rough places plain.*

To this may be added theſe other paſſages out of the ſame prophet. *He that putteth his truſt in me, ſhall poſſeſs the land, and ſhall inherit my holy mountain:*

And ſhall ſay, Caſt ye up, caſt ye up, prepare the way, take up the ſtumbling-bock out of the way of my people *. And again,

Go through, go through the gates: Prepare ye the way of the people: Caſt up, caſt up, the high way: Gather out the ſtones: Lift up a ſtandard for the people †.

Is this the voice of a prophet? Or, Is it not the language of a ſuperintendant of the high-roads, giving his orders in modern phraſe? Which cannot be more punctually fulfilled, than this prophecy is ac-

* Iſa. lvii. 13, 14.

† Ch. lxii. 10.

compliſhed. For whoever conſiders the great improvements made in this kingdom of late years, in ſtraightning and repairing of roads, and in laying out of grounds, may be induced to look upon theſe beginnings, as an earneſt of what may be done hereafter, towards the accompliſhment of this prediction: And they, that engage in ſuch laudable undertakings, will be encouraged to proceed with the greater ſpirit and alacrity; when they reflect, that while they employ themſelves in this manner for the benefit of the publick; they act under a divine commiſſion: They carry on the deſigns of Providence, and contribute their endeavours to fulfill a divine prophecy: Whence they may hope for a bleſſing on the work of their hands.

I ſhall cloſe this chapter with ſome lines out of our poet *Prior*, who, it ſeems, fell into this way of thinking:

Diſparted ſtreams ſhall from their chanels fly;
And deep ſurcharg'd by ſandy mountains lie,

Obſcurely

Obſcurely ſepulchred. By eating rain,
And furious winds, down to the diſtant plain,
The hill that hides his head above the ſkies,
Shall fall: The plain by ſlow degrees ſhall riſe
Higher than erſt had ſtood the ſummit-hill:
For time muſt nature's great beheſts fulfill.

Prior's Solomon, Book. I.

CHAP. XI.

ON THE STATE OF THE PRESENT EARTH IN RESPECT OF IMPROVEMENT AND FERTILITY.

IF we conſider the manifold appearances of deſign, and of final cauſes, in the conſtitution and government of the world; we cannot avoid concluding, that the great Author and Moderator of it muſt have laid down ſome certain plan, upon its firſt formation, which he conſtantly and invariably purſues in the conduct of the whole, and every part, throughout all its revolu-

revolutions, from the firſt period of its exiſtence, to the final conſummation of all things. And what general notion can we form of that plan, which we can conceive to be more worthy of wiſdom itſelf to contrive; and of goodneſs itſelf to delight in the purſuit and execution of—what plan indeed more neceſſary, after the diſorder that was introduced into the world; than that of a melioration, and improvement of it, in all its parts; and in every capacity? Riſing, in the language of poetry ——

By due gradation, nature's ſacred law;
Nature delights in progreſs, in advance;
From worſe to better *—
From ſeeming evil, ſtill educing good;
And better thence again, and better ſtill:
In infinite progreſſion †.

We have ſeen ſome inſtances of improvement and benefit in the laſt chapter,

* Dr. *Young's* Night Thoughts, ix. p. 383.
† *Thompſon.*

and in ſome of the foregoing ones. Others may be recounted: There are ſeveral prophecies in *Iſaiah*, which have a near relation to that which was laſt under conſideration; and which ſeem to point at ſome other improvements which are actually carrying on at this time. What think you of the following paſſages? *In the wilderneſs ſhall waters break out, and ſtreams in the deſert. And the parched ground ſhall become a pool; and the thirſty land ſprings of water* *.

I will open rivers in the high places, and fountains in the midſt of the valleys: I will make the wilderneſs a pool of water, and the dry land ſprings of water †.

Behold, I will do a new thing: Now it ſhall ſpring forth, ſhall ye not know it? I will even make a way in the wilderneſs, and rivers in the deſert ‡?

* Iſai. xxxv. 6, 7.
† Jer. xli. 18.
‡ Jer. xliii. 19. Comp. ver. 20. and ch. xliv. 3.

And

And what think ye of thoſe vaſt undertakings, which have been for ſome years of late, and ſtill are, carrying on in this kingdom, of opening canals, and floods of water; not only for pleaſure and ornament, but for the uſe and benefit of navigation; and carrying theſe artificial rivers acroſs other rivers; through mountains, and rocks, and moraſſes, and various other places, which ſeemed to forbid the attempt: But which yielded to the ſkill and contrivance, and indefatigable induſtry of *one man*? With ſuch a pattern before their eyes, what may not poſterity attempt? Is not this doing *a new thing? Opening rivers in high places*—in the very heart of them—And *fountains in the midſt of valleys*—in the very depth of them; where they do not naturally ſpring? This ſeems to be not only controuling, but even reverſing nature's laws, by which fountains are not opened in valleys, but in hills and high places, and rivers run not over hills, but in valleys.

I will

I will open rivers, ſays the Almighty—What he doth by the inſtrumentality of men, he doth by himſelf. It is he that *giveth wiſdom to the wiſe*, and that *teacheth man knowledge. I will make a way in the wilderneſs*—and ways have been made in wilderneſſes.

What think ye of theſe texts? *I will plant in the wilderneſs the cedar, the ſhittah-tree, and the myrtle, and the oil-tree: I will ſet in the deſert the fir-tree, the pine, and the box-tree together**. *Inſtead of the thorn, ſhall come up the fir-tree; and inſtead of the brier, ſhall come up the myrtle-tree: And it ſhall be to the Lord for a name, for an everlaſting ſign, that ſhall not be cut off* †.

The Lord ſhall comfort Zion: He will comfort all her waſte places, and he will make her wilderneſs like Eden; and her deſert like the garden of the Lord: Joy and gladneſs ſhall be found therein, thankſgiving, and the voice of melody ‡.

* Iſai. xli. 19.

† Ch. lv. 13. Comp. ch. lx. 13.

‡ Iſai. li. 3.

And the deſolate land ſhall be tilled; whereas it lay deſolate in the ſight of all that paſſed by. And they ſhall ſay, This land that was deſolate is become like the garden of Eden; and the waſte, and deſolate, and ruined cities, are become fenced, and are inhabited *.

Theſe texts are primarily meant of the land of *Judæa:* But they may be underſtood of the kingdom of the *Meſſiah* in general, which extends to all lands.

In this view, what think ye of the great improvements in huſbandry of various kinds, and in its ſeveral branches, which are made, promoted, encouraged, and patronized among us? And particularly, of that ſpirit of planting, and raiſing all manner of trees and ſhrubs; as well for uſe, as for ornament; not only thoſe of our own growth, but all kinds of exotics, being brought from the moſt diſtant parts of the world, and from the moſt different climates, to be naturalized in the ſoil of *Great Britain*, to adorn and enrich it?

* Ezek. xxxvi. 34, 35.

Now

Now put all theſe things together: Compare theſe ſeveral prophecies with their reſpective events; and ſay, whether you do, or do not, ſee a reſemblance between them; and whether the events, as far as they go, do not literally correſpond with the predictions? If you ſay they do not, you muſt ſhew wherein; otherwiſe you contradict facts. For the facts ſhew they are correſpondent with the prophecies. They verify the truth of them.

There are many prophecies which foretel an extraordinary fertility of the earth; and which promiſe great abundance in the fruits of it, beyond what hath been yet experienced: But which we have grounds to hope for, from ſeveral appearances and tendencies in nature, which ſeem to be working towards a completion of thoſe prophecies.

It hath been obſerved, that the prophets deſcribe the days of the *Meſſiah*, in much the like terms with the poets, in their deſcriptions of the golden age, as abounding with

with the greateſt increaſe and plenty of all the fruits of the earth.

In that day ſhall the branch of the Lord be beautiful and glorious; and the fruit of the earth ſhall be excellent and comely, for them that are eſcaped of Iſrael, ſaith the evangelical prophet *Iſaiah* *. And thus ſaith the prophet *Hoſea*:

It ſhall come to paſs in that day; I will hear, ſaith the Lord, I will hear the heavens: And they ſhall hear the earth;

And the earth ſhall hear the corn, and the wine, and the oil †. Theſe words are paraphraſed by the *Targum* in plain language, without a figure. "I will command the heavens; and they ſhall ſend rain upon the earth: And the earth ſhall produce corn, and wine, and oil." They are well commented upon by Dr. *Lowth*, to the ſame effect. "All creatures ſhall anſwer the deſires, and wants of my people: The heavens ſhall anſwer the wants of the earth, in ſending down ſeaſonable ſhowers; and

* Iſai. iv. 2.

† Hoſea ii. 21, 22.

the earth ſhall anſwer the wants of mankind, in bringing forth corn, and wine, and other neceſſaries of life." The ſame ſenſe is more plainly expreſſed by *Zechariah*. *The ſeed ſhall be proſperous: The vine ſhall give her fruit; and the ground ſhall give her increaſe, and the heavens ſhall give their dew: And I will cauſe the remnant of this people to poſſeſs all theſe things* *. To the ſame purpoſe is that of the prophet *Amos*. *Behold the days come, ſaith the Lord, that the plowman ſhall overtake the reaper; and the treader of grapes, him that ſoweth ſeed: And the mountains ſhall drop ſweet wine; and all the hills ſhall melt* †. The ſenſe of theſe words is pretty well agreed in; but, according to my apprehenſion, they have been ſtrangely miſ-tranſlated, in all, both antient and modern, verſions; being the very reverſe of what they ſhould be; according to the grammatical conſtruction, and order of the words: and the true force and import of the paſſage. The words

* Zech. viii. 12.

† Amos ix. 13.

are,

are, נגש חורש בקוצר; which I think ſhould be rendered, not, *the plowman ſhall overtake* —But, *the plowman ſhall be overtaken by the reaper* *: Importing the forwardneſs with which the fruits of the earth ſhould grow, and ripen; and the earlineſs of the harveſts.

Then follows, ודרך ענבים, *the treader of grapes* ſhall be overtaken במשך, *by him that caſteth the ſeed:* Signifying the fervour and briſkneſs with which the ſeveral branches of huſbandry ſhould be carried on; the one, as it were, treading upon the heels of the other. The ſeed-time always follows the vintage; and I preſume always will, ſooner or later: But according to the received tranſlations, the vintage is made to follow the ſeed-time, which is prepoſterous. Neither is the plowman's overtaking the reaper, but what, for the moſt part, always doth, and, I preſume, always did happen; it be-

* According to this rendring, נגש, is underſtood paſſively in *Niphal*; and the prefixed propoſition ב has its proper ſignification, בקוצר, *by* the reaper; which it otherwiſe loſes.

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ing generally high time to begin preparing the ground for ſowing another crop as ſoon as harveſt is got in. To proceed to the context—*And the mountains ſhall drop ſweet wine; and all the hills ſhall melt:* That is, according to the *Vulgate* and *Targum, ſhall be cultivated.* According to the LXX and *Arabic, ſhall be planted.* Or, more conſonant to the meaning of the word, תתמוגגנה *ſhall be diſſolved* into fat glebe: Of which ſome remarkable inſtances will be ſeen hereafter.

In terms much alike to the foregoing, the plenty, with which obedience ſhall be rewarded, is deſcribed in the law. *If ye will walk in my ſtatutes, and keep my commandments to do them: Then I will give you rain in due ſeaſon; and the land ſhall yield her increaſe; and the trees of the field ſhall yield their fruit. And your threſhing ſhall reach unto the vintage; and the vintage ſhall reach unto the ſowing time;* agreeably to the interpretation given of *Amos* ix. 13. *And ye ſhall eat your bread to the full; and dwell*

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*in your land ſafely**. So again, *And it ſhall come to paſs in that day, that the mountains ſhall drop down new wine; and the hills ſhall flow with milk; and all the rivers of Judah ſhall flow with waters; and a fountain ſhall come forth of the houſe of the Lord, and ſhall water the valley of Shittim*†.

Promiſes of great fertility and plenty are made in other parts of ſcripture, upon condition of obedience, which is always implied, and often expreſſed. Thus God declares, *that if his people had hearkened unto him, and Iſrael had walked in his laws, he ſhould have fed them with the fineſt of the wheat; and with honey out of the ſtony rock would he have ſatisfied them*‡.

The rewards of obedience under the goſpel are promiſed to be an hundred fold in this time‖. And the ſeed ſown in good ground brings forth, ſome thirty, ſome

* Lev. xxvi. 34, 5.

† Joel iii. 18.

‡ Pſ. lxxxi. 13—16. Comp. Pſ. lxxxv. 12—lxxvii. 6.—civ. 30.

‖ Mark x. 30.

ſixty, and ſome an hundred fold. This, though to be underſtood in a ſpiritual ſenſe, yet as it is founded upon the literal, there muſt be a propriety in that ſenſe for it.

There is a paſſage in *Irenæus*, which ſets forth, "that under the reign of the *Meſſiah*, the creation ſhall be renewed, and ſet at liberty; and ſhall yield plenty and abundance of all things; being bleſſed with the dew of heaven, and a great fertility of the earth:" For which he quotes *Papias*, and other eccleſiaſtics; who had ſeen *John* the diſciple of the Lord; and had heard of him what our Lord had taught concerning thoſe times*.

And though the relation which follows, concerning the prodigious increaſe of the fruits of the earth, is quite hyperbolical, eſpecially if taken in the li-

* Creatura renovata et liberata multitudinem fructificabit univerſæ eſcæ, ex rore cæli, et ex fertilitate terræ: Quemadmodum preſbyteri meminerunt, qui Johannem diſcipulum Domini viderunt, audiſſe ſe ab eo, quemadmodum de temporibus illis docebat Dominus.
Iren. lib. v. cap. 33.

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teral ſenſe, yet we cannot conclude, that it was altogether without foundation; but that it is probable, our Lord and his apoſtles had frequently entertained their hearers with deſcriptions of the happy and flouriſhing ſtate, to which the world ſhould at length be brought, under the reign of the *Meſſiah*: which, being underſtood in too groſs a ſenſe, was enlarged upon by *Papias* and others in ſo extravagant a manner.

The relation ſets forth, that there ſhall be an increaſe of the fruit of the vine, of wheat, and all manner of other fruits and grain, in a continued progreſs of ten thouſand fold, to an infinite degree *.

* Venient dies, in quibus vineæ naſcentur, ſingulæ decem millia palmitum habentes; et in unâ palmite dena millia brachiorum; et in uno brachio dena millia flagellorum; et in unoquoque flagello dena millia botruum; et in unoquoque botro dena millia acinorum; et unumquodque acinum expreſſum dabit viginti quinque metretas vini—Similiter et granum tritici decem millia ſpicarum generaturum—et reliqua autem poma, et ſemina, et herbam ſecundum congruentiam iis conſequentem. Ib.

Theſe ſeem to be the excurſions of an extravagant fancy, which knows no bounds: On the other hand, we cannot pretend to preſcribe any limits to the powers of nature in the hands of the author of it. It undoubtedly hath a very prolific diſpoſition, and a tendency to increaſe and multiply, beyond the conception of a careleſs obſerver. We ſhall be able to form a better conception of the great capacity of fructification, which there is in all vegetables, if we conſider, that trees, and plants, and grain, are, by the ſtructure and organization of their parts, diſpoſed to produce much greater quantities of their ſeveral fruits, than they do at preſent; as appears from the great number of fruitleſs ſtems and buds, with which they abound; and which, if become vigorous, and made to bear fruit to perfection, how immenſely great would the produce be! Proofs of this we have in fact, from the amazing number of ſtems, and ears, and grains, which have been raiſed from one ſingle grain of

wheat*, for inſtance. And though nature is at preſent in a corrupt, and languid, and degenerate ſtate; and hath been much obſtructed in its operations hitherto; yet, as it doth nothing in vain, it hence ſeems to

* The following paſſage out of Mr. *Ray*, on the wiſdom of God in the creation, p. 129, is very deſerving of a place here.

" It is worthy the noting, that wheat, which is the beſt ſort of grain, of which the pureſt, moſt ſavory, and wholeſome bread is made, is patient of both extremes, heat and cold; growing and bringing its ſeed to maturity, not only in temperate countries; but alſo, on one hand, in the cold and northern, *Scotland*, *Denmark*, &c; on the other, in the hotteſt and moſt ſoutherly, as *Egypt*, *Barbary*, *Mauritania*, the *Eaſt Indies*, *Guinea*, *Madagaſcar*, &c. ſcarce refuſing any climate.

Nor is it leſs obſervable, and not to be commemorated without acknowledgment of the divine benignity to us, that, as *Pliny* rightly notes, nothing is more fruitful than wheat: Hoc enim, ſaith he, natura ei attribuit, quoniam eo maximè alat hominem: utpote cum e modio, ſi ſit aptum ſolum, quale in Byzantio Africæ campo, centeni quinquageni modii reddantur. Miſit ex eo loco Divo Auguſto procurator ejus, ex uno grano (vix credibile dictu) 400 paucis minus germina; Miſit et Neroni ſimiliter 340 ſtipulas ex uno grano. Nat. Hiſt. l. xviii. c. x.

promiſe a recovery of its powers; ſo as to exert them more vigorouſly in the production of the fruits of the earth *.

The diſpoſition and tendency of the ſeveral conſtituent parts of the earth in general, and likewiſe the form of it, which will be taken notice of hereafter, contribute to the improvement, fertility, and wholeſomeneſs of it. The draining off of the waters from the mountains, and the lowering of them, render them more habitable, gramineous, dry, and capable of cultivation: And on the other hand, the waſhing down of the ſoil and ſilt into the valleys, deepens the glebe, and conſtantly feeds, fattens, and fertilizes it. The very ſtones and rocks contribute to this end. The lime-ſtone, when ſlacked, at the ſame time that it invigorates the ſoil it is mixed

* See *Nieuwentyt's* Rel. Phil. vol. ii. p. 723. And Memoirs of the Royal Academy of Sciences at *Paris*, 1700, 1701, where there is a diſſertation on this ſubject—That no plant ever arrives at its utmoſt perfection; in compariſon of the parts with which it is furniſhed.

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with, is converted into it; and we know how much human induſtry hath in theſe late years been employed in this reſpect; a continuance of which for ages muſt be attended with very conſiderable effects. Rocks of various other kinds have been obſerved to moulder into earth, even of themſelves; by the mere effect of air and moiſture, heat and cold, looſening their texture, and uncompounding them; and by degrees, reducing them into fine vegetable mould*: And thus, according to the prophecy above taken notice of, *the hills ſhall melt.* And we know not how far nature may in time operate to its own melioration in this reſpect: Not to mention, that the ſubſtance of the mountains and rocks is not a little reduced, by the digging of mines, of various kinds of ore, and coal; the produce of which is all converted to the uſe of man. Thus the growth of rocks and minerals is in a great

* See Gent. Mag. for June, 1764.

meaſure reduced, and terminates in that of a fertile earth.

In proportion to the decreaſe of the element of water, vapours and clouds ariſing from it, will decreaſe likewiſe; whereby the air will become more ſerene and ſalubrious to breathe in, and by that means contribute to health and longevity.

It was obſerved above *, that the mountains contributed much to the production of rain; ſo that, in the opinion of a judicious perſon taken notice of in the laſt chapter, it rained ten times as much in high mountainous countries, as in lower places: much likewiſe of the rain, which falls upon champaign countries, is carried thither by the winds, from the neighbouring hills, where it is generated. Now, as the mountains contribute ſo much to the production of rain, they muſt contribute to this end in proportion to their height and bulk: The lowering

* Ch. II.

and

and reducing the bulk of them muſt conſequently be attended with leſs rain; whence the rivers muſt become leſs, as they have been obſerved to do; and the element of water in general be leſſened likewiſe. The conſequence of this will be, a drier, purer, and more elaſtic air. And on the other hand, in proportion as the rain decreaſes, the want of it for watering and moiſtening the earth, will probably be ſupplied, as it was originally, by gentle miſts and ſoft vapours.

The gaining of the land upon the water, and the growth of the earth in bulk, makes a gradual increaſe of its ſurface; and enlarges its borders, to make room for a proportionable increaſe of its inhabitants. The increaſing fertility of it, likewiſe, will at the ſame time furniſh nouriſhment for a greater number of people, and other animals, in the ſame compaſs, than in a ſtate of ſterility it could afford.

There are ſeveral other conſiderations which will help to confirm and illuſtrate what

what hath been here advanced. In the Philoſophical Tranſactions, for the year 1677, it is obſerved, that the climate, both of *England* and *Ireland*, was then grown more mild. And the ſame obſervation is made, with regard to *America* and *Iceland*, in the Tranſactions of the preceding year: And that *Europe* in general is become warmer than formerly, is proved from the teſtimonies and obſervations of ſeveral authors, antient and modern; and is accounted for, by ſuppoſing, "that the land is at preſent much better cultivated; and that the woods are cleared, which formerly threw a ſhade upon the earth, and kept the rays of the ſun from penetrating to it *." Add to this, that woods have a very damp atmoſphere; eſpecially in the ſeaſon of vegetation—and that the burning of fires helps to diſpel the fogs and vapours; eſpecially in the neighbourhood of great towns and cities.

* See Hume's Diſcourſe on the populouſneſs of antient nations, p. 246.

"It

"It is an obſervation of *L'Abbé du Bois*, that *Italy*, in particular, is warmer at preſent, than it was in antient times. The annals of *Rome* tell us, ſays he, that in the year 480 ab U. C. the winter was ſo ſevere, that it deſtroyed the trees. The *Tyber* froze in *Rome*, and the ground was covered with ſnow for forty days.—At preſent the *Tyber* no more freezes at *Rome*, than the *Nile* at *Cairo*. The *Romans* eſteem the winter very rigorous, if the ſnow lies two days, and if one ſees, for eight and forty hours, a few ſmall icicles hang from a fountain that hath a north aſpect *."

The writer from whom I take this, adds—The obſervation of this ingenious critic may be extended to other *European* climates; of which he gives us many remarkable inſtances; ſuch as *Gaul*, *Germany*, the north of *Spain*, *Pannonia*, and the coaſts of the *Euxine* Sea †. And we have lately had farther proofs and illuſtra-

* Hume, ib. p. 243.

† Ib. p. 244.

tions

tions of the greater warmth of *Italy* at preſent, than that of former times, in the Philoſophical Tranſactions *.

All climates and countries, even the moſt dreary, barren, and unwholeſome, are improved, and made more healthy and habitable, as well as more fertile, by being planted with colonies, cleared and cultivated; of which all the *American* plantations are ſo many proofs.

It hath been obſerved, That almoſt the only natural produce of our own country were *hips* and *haws*, when in a mere ſtate of nature. It may be left to every man's obſervation, how very different its ſtate is become by cultivation. And even ſince it began to be cultivated, the climate is become more temperate, and the ſeaſons more favourable and forward; as appears from the lateneſs of their harveſts formerly, in compariſon with the preſent times. The harveſt month, in antient times, was *September*, as the *Britiſh* name,

* By the Hon. *Daines Barrington.*

Mis

Mis medi, imports*: But the bulk of the harveſt, eſpecially in the corn countries, is generally got in now, before that month begins. In the *Iriſh* almanack, the harveſt month is ſet down as beginning *Sept.* 12, which falls in with the firſt of that month, N. S. But, I preſume, the harveſt now begins in *Ireland* much ſooner than the twelfth, or firſt of *September*. Before the alteration of the ſtile, the hunting-ſeaſon, which ſuppoſes the fields to be cleared of the corn, was reckoned to begin at *Bartholomew*-tide, which anſwers to *September* 5, O. S.

That *September* was the harveſt month, when *Cæſar* invaded this iſland, appears very plainly in his *Commentaries*. He made his firſt deſcent, *exiguâ parte æſtatis reliquâ*†. Dr. *Halley* hath clearly proved, that *Cæſar* landed in *Britain* on the 26th of *Auguſt*, in the 55th year before Chriſt‡. Four days after, *Auguſt* 30, at midnight,

* See Eſſay on Redemption, p. 76.

† De bello Gallico, lib. iv. cap. 20.

‡ See Phil. Tranſ. N° 193.

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it is found by calculation, as well as by *Cæſar's* account, that the moon was at the full; when the ſtorm aroſe that ſhattered his ſhips. The refitting of theſe ſhips took up the firſt week in *September*, during which time, *frumentum ex agris in caſtra quotidie conferebat* *. After that, it is ſaid, as well in the order of time, as in the courſe of the narration—*Legione, ex conſuetudine, unâ frumentatum miſſâ—pars hominum in agris remaneret—omni ex reliquis partibus demeſſo frumento, una pars erat reliqua:* And while the ſoldiers were employed about this part—*Tum diſperſos, depoſitis armis in metendo occupatos, ſubito adorti, paucis interfectis, reliquos incertis ordinibus perturbaverant* (Britanni) †.

For ſeveral days after this, the weather was tempeſtuous; which happened about the change of the moon, *Sept.* 13, which kept the *Romans* in their camp. When they afterwards fought, and worſted the

* Cæſar, Comm. ib. cap. 31.

† Ib. cap. 32.

Britains;

Britains; it was at the eve of the equinox, about the 22d of *Sept.—propinquâ die æquinoxii* *.

This expedition ſeems to have been calculated againſt harveſt, to ſupply the army with bread-corn; which, for that reaſon, they came unprovided with.

Now if the corn-harveſt was ſo late in the warm, cultivated parts of *Kent*, bordering on the *Downs*; how much later muſt it have been, in the other more northerly, and colder parts of the iſland in thoſe times?

On the oppoſite coaſts of *Gaul*, the harveſt was no earlier: For while *Cæſar* was employed in *Britain*, his generals were ravaging the country of the *Menapii*, *agris vaſtatis*; *frumentis ſuccifis* †.

In a word, all climates ſeem to be meliorated. Even *Siberia*, which was proverbially inhoſpitable, and uncomfortable to

* Ib. cap. 36.
† Ib. cap. 38.

live

live in, is, by the report of modern travellers, no bad country upon the whole; and on the banks of the *Jeniſka*, is rich and fertile *.

The irruption of the northern nations into the warmer and richer countries of *Europe*, was moſt probably owing to the poverty of the parts they came from; and their inſufficiency to ſuſtain any conſiderable increaſe of people: Whereas I do not know whether it will be too much to ſay, that the moſt barren of thoſe countries now ſupport, in eaſe and plenty, ten times the number of thoſe that then were ſtarving upon them †.

I intimated, that the very form of the earth contributed ſomething towards the improvement and fertility of it. As the circumvolution of the earth on its axis ſeems to have been the means of reducing it into form; ſo it may continue to have the ſame effect, in rounding and ſmoothing the ſurface of it; and in bring-

* See *Bell's* Travels.

† See *Hume*, ib. p. 248.

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ing it to the form of an oblate ſpheroid; of which form it hath lately been demonſtrated to be; and by which means, I conceive it muſt neceſſarily have aſſumed this form: The nature of the motion* operating upon the thing moved, to aſſimilate it to itſelf, ſo as to be the better adapted to receive that motion: Though poſſibly it may not yet be brought to the form of a perfect ſpheroid. The inequalities of its ſurface demonſtrate it not to be ſtrictly ſuch†. But its conſtant rotation

* Sir I. N. affirmed the earth to be an oblate ſpheroid; and the *French* Mathematicians, by menſuration, proved it ſo to be.

† It may not be amiſs here to ſtate the proportion, which the inequalities, cauſed by the mountains, in the ſurface of the earth, bear to the whole bulk of the globe. The mountains of *Peru*, the higheſt in the world, are about 3000 fathoms in height, from the ſurface of the ſea. The diameter of the earth is 3000 leagues: The proportion therefore, which the one bears to the other, is that of a fathom to a league; or one foot to 2200 feet. So that though the enormous height of the mountains, and unfathomable depths and gulfs of the ocean, make ſuch

tion ſeems to be conſtantly rounding off the extremities of theſe inequalities; and the very impinging of them againſt the atmoſphere may contribute ſomething to this end; by which means it will become more and more ſpheroidical, ſmooth, and level.

We want not intimations in ſcripture concerning this form of the earth. *He hath compaſſed the waters with bounds*, ſaith *Job* *. *He ſet a compaſs on the face of the depth* †. *It is he that ſitteth upon the circle of the earth* ‡.

The

arduous up's and down's, and are ſo horribly rugged in appearance, to us, and indeed in themſelves likewiſe; yet, in compariſon with the whole volume and bulk of the globe, they are really ſo trifling and inconſiderable, that they are ſcarce worth being brought into eſtimation; and are to be *counted but as the ſmall duſt of the balance.* To the earth's ſemidiameter, they are but as duſt upon our common globe.

* Job xxvi. 10.

† Prov. viii. 27.

‡ Iſai. xl. 22. I do not mention, what we read in the Pſalms of the *round world*, as any authority: For I queſ-

The antients, *Jews* as well as heathens, had but very imperfect and confused ideas of the form of the earth. They at first supposed it to be flat, and round like a dish; having the ocean for its horizon, beyond which they could not conceive there was any *terra firma*. And that the heavens and the earth above this ocean was the whole visible universe; and that all beneath it was *Hades*, or the invisible world.

Some imagined it resembled a drum, or oblong cylinder. Others got into the notion of its being spherical. And this continued to be the prevailing opinion, till the last age; when it was called in question, and the form of the earth was supposed to be elliptical, or spheroidical. But here again

I question whether the idea of rotundity is implied in the original, as was intimated above, p. 94. תבל, which we so translate, I apprehend is a general term, signifying the terraqueous globe, in contra-distinction to ארץ, which is restrained in its signification, to that of dry-land. Thus they are distinguished, Ps. xc. 2. ארץ ותבל, *The earth, and the world.*

the learned were divided; ſome ſuppoſing the axis, on which it turned, to be its greateſt diameter; and the meridians to be ſo many true ellipſes; while others ſuſpected the contrary.

The notion even of the ſpherical figure of the earth, though it obtained early, was but ſlowly come into. The riſe of the doctrine of *antipodes* ſhews when they began to get over their prejudices againſt it.

The firſt hint that I remember to have read of them, is in *Cicero*; who, in deſcribing them, ſays, *Adverſa nobis urgent veſtigia* *. And *Seneca*, the tragedian, hath a remarkable paſſage to the ſame purpoſe—

Te licet terra ultimo
Summota mundo dirimat oceani plagis;
Orbemque noſtris pedibus obverſum colas;
Sceleribus pœnas dabis †.

But the exiſtence of *antipodes* was ſtill no more than conjecture, and was looked up-

* Somn. Scipionis.

† *Hyppolytus*, Act iii. Scen. 3.

on

on as a paradox for ſeveral centuries—as great a paradox, as the notion here advanced concerning the future equality of the earth's ſurface. It was much oppoſed by the fathers of the church: It was ridiculed by *Lactantius* *, and ſtiffly denied by St. *Auſtin*; chiefly indeed on account of ſome religious prejudices: For being carried away by the then vulgar error, that there could be no communication between the known parts of the world, and thoſe obverted to them, if any ſuch there were; he ſaw, if he were to allow the exiſtence of *Antipodes*, it would be difficult to account for their being deſcended from *Adam*; as he was perſuaded the whole race of mankind was, from the verity of the *Moſaic* hiſtory †.

Hence *Vigilius* was, ſo late as in the eighth century, condemned as a heretic, for holding the doctrine of *antipodes*. So ſlowly did the world come into the belief

* De falſâ ſapientiâ, lib. iii. ſect. 24.
† De civ. Dei, lib. xvi. cap. 9.

of their exiſtence; which, it may be preſumed, they would have embraced more readily, had they not had the like prejudices againſt the ſpherical figure of the globe. Knowledge is progreſſive, ſo is nature; and both ſeem to keep peace with each other, in their reſpective improvements; till both arrive at that degree of perfection, which the limited capacity of the creature is ſuſceptible of.

Let us now take a view of what hath been diſcourſed of in the forgoing chapters.

We have ſeen, how the earth, which at firſt was *without form*, was brought into form, by its revolution on its axis: And by what means the elements were ſeparated from each other. The dry land occupied the middle, or equatorial parts of the globe, and the water was detached to the extreme, or polar parts. The earth at firſt *was without form and void:* That void was ſoon filled up; and the earth was furniſhed and enriched with every thing requiſite

quiſite to render it a commodious, happy, and delightful habitation for man; who was then created, and put into poſſeſſion of it. But man fell; and his fall affected the earth, which was inhabited by him; and which, for the puniſhment of his tranſgreſſion, was doomed to loſe its fertility; and from the beautiful form, in which it had been laid out, was convulſed, and thrown into diſorder and confuſion, by means of an univerſal earthquake; the effect of which was, that in ſome places it opened, and ſunk into deep gulphs; and in other parts, it reared up its *hydra* heads to the heavens *.

This however entered but a little way into the earth, in compariſon with the whole bulk of it; which was ſuffered to preſerve the ſame advantageous poſition and

* Is not the old fable of the giants heaping up mountains upon mountains, to ſcale heaven, and make war with the gods, founded upon a tradition of the rebellious crew of apoſtate angels, with man ſeduced to fight under their banner, having cauſed the earth to be thrown up into ſuch enormous heaps?

aſpect towards the ſun, which was at firſt given it; till the wickedneſs of man increaſing, cauſed the diſturbance of this likewiſe; and produced a ſhock, which quite diſlocated, and threw it, from its erect and upright poſition, into an oblique and declining one: The conſequence of which was, its diſcharging the waters lodged at the poles; which ſpreading over the whole face of it, drowned the earth, and all its inhabitants; except the few, whom God preſerved in the ark, to repeople and repleniſh it.

We have ſeen how the waters, when they had executed their commiſſion, were remanded to their former receptacles; but left plain veſtiges of the ravages they had made. The tops of the mountains were waſhed away, and their ſides and ſkirts were furrowed and chaneled in the manner we behold them, by the firſt abatement of the deluge, and by the ſubſequent draining, and running off of the waters: By theſe and other means, the mountains

tains have been lowering ever ſince, and the valleys filling and riſing. The earth, upon the whole, becomes leſs uneven; and affords a proſpect of being by degrees brought nearly level. The element of water hath been decreaſing, and the dry land increaſing, and gaining upon the ſea, and becomes more and more ſecure from a ſecond deſtruction by water; purſuant to the divine promiſe and covenant in that reſpect.

By the curſe, the face of the earth was diſordered, deformed, and doomed to be over-run with thorns and thiſtles. That labour, to which man was ſentenced, hath been the appointed means of overcoming thoſe deformities; beautifying the face of nature, extirpating and deſtroying all its uſeleſs and hurtful productions, and raiſing in their ſtead ſuch as are moſt neceſſary and beneficial for the nouriſhment and ſupport of life; together with ſuch as contribute to the conveniences and elegances of it.

For

For theſe purpoſes it hath had the benefit of regular ſeaſons, which if they have not all the advantages of the firſt ſtate of the earth, have others, that in a good meaſure compenſate them; and give it a preference to that ſtate, which was introduced by the curſe, and continued till the flood.

In proportion to the progreſs, which, age after age, is made in improvements of this kind; and in this age eſpecially, which exceeds all that have gone before it in this reſpect—In proportion hereto, I ſay, the curſe of the ground is removed and overcome. In a word, "The fall was the corruption of the natural and moral world, and the ruin of all the glory and happineſs of the creation*." It is the plan of Providence, to bring about the recovery of the creation in both reſpects, by the concurrence and inſtrumentality of the creature man; through whom the

* Bp. Sherlock's Uſe and Intent of Prophecy, Diſc. iii.

corrup-

corruption and ruin of it was effected: And in ſuch meaſure and degree, as man co-operates, this end is obtained; and the *creation is delivered from the bondage of corruption* *; and enabled to recover its firſt flouriſhing and happy ſtate.

To cloſe this chapter, I ſhall only obſerve farther, That the drying up of the earth, by the ſeveral cauſes before mentioned, will, by degrees, render it more combuſtible; and diſpoſe it for the next cataſtrophe, which it is to undergo.

* Rom. viii. 21. Κτισις is tranſlated *creation*, in the next verſe; and it ought to be ſo tranſlated here and every where, to render the paſſage uniform throughout.

CHAP.

CHAP. XII.

OF THE GENERAL CONFLAGRATION.

THAT the great Creator, and wiſe Governor of the univerſe, whoſe *tender mercies are over all his works*, ſhould deſtroy thoſe the works of his own hands, might appear to us incredible; had we not known, that he hath once deſtroyed the world already; and had it not been revealed to us in his holy word, that it is his fixt purpoſe and decree to deſtroy it again.

As it was not without juſt cauſe that he was moved to deluge the old world; in

in which he conſulted the good of his creation in general; ſo he undoubtedly hath wiſe and gracious purpoſes to ſerve in the dreadful viſitation with which he threatens the preſent world. The old world was drowned, not only for the wickedneſs of them that dwelt therein; but the waters of the deluge, as obſerved, Chap. V. ſerved by way of luſtration, to waſh it from the pollutions which it had contracted by the impurities of its inhabitants.

But though the earth was thus purged and luſtrated, and its face was renewed and cleanſed, for the better reception of its future inhabitants—Though it hath been acquiring improvements of various kinds ever ſince, as we have ſeen in the preceding chapter; and will be yet farther improved and meliorated, beyond what we can at preſent conceive; yet in ſo long a ſeries of ages, and from the iniquity which in all ages hath abounded, and will too much abound to the end; it will, like

the

the old world, contract corruption like-wiſe; which will obſtruct its coming up to its primitive model: And how much ſoever it ſhall be enriched and beautified, it will not be without its defects and blemiſhes. There will be ſomething ſtill wanting in it of that perfection, in which it came out of the hands of its Creator. The deep ſtain, which entered into it at the fall, was not entirely waſhed away by the flood; nor hath it been worn out ever ſince: And the diſorder and confuſion, it was thrown into, will not be all rectified; nor its diſlocated members reduced to their proper ſituation, by all the amendments and reſtoratives, which it ſhall have had the benefit of. At leaſt, this we may be poſitive of—This *we know*, ſays the apoſtle, *that the whole creation groaneth, and travaileth in pain together until now* *: Notwithſtanding all the advantages it hath received, in order to a recovery. Some

* Rom. viii. 22.

ſeverer

severer operation must therefore be performed upon it, before its cure can be completed. It must undergo a second lustration by fire, to purge away all its dross; and refine it, so as to come up to its original standard. So great is the malignity of that evil, which requires such severe, and repeated, and continued remedies, in order to the entire cure and removal of it.

We have grounds from scripture to believe, that natural and moral evil will, in a great measure, yet not totally, be removed and overcome, before the consummation of all things; and that the latter ages of the world, next preceding its final dissolution by fire, will, in general, be the best and happiest; and will approach the nearest to the innocence and perfection of the paradisiacal state. On the other hand, there is reason to apprehend, there will still be in it some seeds of evil of both kinds; lurking unperceived for a time, but which will at length break out, and grow to a great head.

The

The world will then be divided into two oppoſite parties, of righteous and wicked men; each of which ſhall prevail in their turns. Righteouſneſs ſhall at firſt flouriſh, and *the ſaints ſhall reign a thouſand years; at the expiration of which term Satan ſhall be looſed out of his priſon: And ſhall go out to deceive the nations, which are in the four quarters of the earth, Gog and Magog, to gather them together to battle.* This is deſcribed as a very formidable hoſt; the *number as the ſand of the ſea,* covering the *breadth of the earth, and compaſſing the camp of the ſaints about, and the beloved city* *.

Ezekiel likewiſe propheſies againſt theſe terrible powers, *Gog* and *Magog*, by name; and foretels their coming up againſt God's people of *Iſrael*, and his land, in the latter years, and latter days. He enumerates the ſeveral nations of which they ſhould conſiſt. He compares them to a

* Rev. xx. 6—9.

ſtorm,

ſtorm, for the fury of their onſet; and for their overſpreading multitude, to a cloud that covered the land. He farther reſembles them to young lions, for their devouring rage; and, which renders them ſtill the more dangerous enemy, he repreſents them as falling by ſurpriſe upon a defenceleſs people that dwelt in ſecurity.

Notwithſtanding all this, it is ſaid, that God would magnify and ſanctify himſelf upon them; that both the houſe of *Iſrael*, and the heathen might know that he was the Lord—that he would turn them back, and put hooks into their jaws: And ſo great would the fury and fire of his wrath and jealouſy be, that it would, as uſual in ſuch viſitations, be attended with a great ſhaking, or earthquake; which would affect every part of the creation—That the mountains would be thrown down, and the ſteep places fall, and every wall ſhould fall unto the ground*—That he would

* This will complete the leveling of the mountains.

call for a ſword againſt them, and would plead againſt them with peſtilence and blood; and would rain upon them overflowing rain, and great hail-ſtones, fire, and brimſtone.

He then proceeds to deſcribe their overthrow; and ſo great would their ſlaughter be, that their weapons of war would be found in ſuch abundance, as to take up no leſs than ſeven years in burning, and to ſave the uſe of all other fuel. The multitude of their dead carcaſes would caſt ſuch a ſtench, as would be highly offenſive; and the burying of them would be a work of ſeven months. And when the bulk of them ſhould be committed to the earth, yet it would be neceſſary to have *men of continual employment ſevered* for burying the remainder of the dead, and to cleanſe the land: And yet, there would be ſo great a ſacrifice from the fleſh of the mighty, and the blood of princes, for the ravenous birds, and beaſts of

of the field to devour, as would quite gorge and ſurfeit them *.

A carnage ſo great as to exceed all parallel muſt be productive of much corruption in the earth; which, together with the diſorder which nature would be ſuffered to run into, and the ravages and deſolations which would be made by this monſtrous race of men, would be a great check and draw-back upon the improvements which will have been made, and may defeat and ſpoil all the efforts of man's induſtry to fertilize and meliorate the earth, together with the concurrence and co-operation of nature to overcome the curſe, and reſtore itſelf; inſomuch, that it is poſſible every thing may run back as faſt, if not faſter, into ruin, than things were going forward before towards an amendment and recovery, and may even reduce the earth to ſuch a ſtate of wildneſs and barrenneſs, as to render it

* Ezekiel xxxviii, xxxix.

quite incapable of being reſtored to what it was originally, in the natural courſe of things, at leaſt during the period aſſigned by God for the duration of the world in its preſent ſtate: And when all other means are uſed in vain, being paſt every other remedy, it muſt at laſt be ſubjected to the neceſſity of being thoroughly purged and purified by fire. Poſſibly the apoſtle alludes to this degenerate ſtate, in theſe words—*That* earth *which beareth thorns and briers is rejected, and is nigh unto curſing; whoſe end is to be burned**. The original curſe not to be totally and finally overcome otherwiſe.

This we may venture to affirm, That God will not have recourſe to extraordinary means for bringing his wiſe purpoſes to paſs, if the more ordinary ones are ſufficient for the purpoſe: This likewiſe is certain, That the corruption of the moral world muſt be attended with that

* Heb. vi. 8.

of

of the natural world; and the one will neceſſarily bring on the other. The moral corruption of this gigantic race of men, according to the ſcripture account of them, muſt grow to an enormous ſize; and probably be not inferior to the wickedneſs of that race, which brought on the flood; and therefore may require, like it, to be puniſhed by a total deſtruction of them.

This is the laſt effort of *Satan*, in which he collects all his might, and all his forces; and threatens the deſtruction of the armies of the living God; and the overthrow of the kingdom of his Son: But he himſelf, with all thoſe whom he had enliſted under his banner, are deſtroyed and *devoured by fire*, as it follows in the Revelation. This fire may poſſible be a prelude to that which is to conſume the earth: For immediately after that, is an account of the general judgment. This wicked and apoſtate race of men, being quite deſperate and irreclaimable, muſt

therefore be extirpated, and conſigned to perdition: And the earth, over-run with the infection, contracted from them, is not otherwiſe to be purified, but by the firy ordeal.

There were ſome of the antients who believed, that all mankind ſhould undergo a ſtate of purgation at the laſt great day; which they imagined would conſiſt of a a probational fire, through which all muſt paſs; and which ſhall differently affect us, as we ſhall be differently prepared: And this ſeems to have been the current opinion from *Origen* downwards *.

And thus, as the wickedneſs of man was the cauſe of the deſtruction of the old world

* Vide *Origen.* in Exod. xv. Hom. vi. and in Pſ. xxxvi. Hom. iii. *Lactant.* Inſtit. lib. vii. cap. 21. p. 653. *Baſil* in Iſa. iv. 4 tom. i. p. 932. *Greg. Naſſ.* de Mortuis Orat. tom. iii. p. 638. *Greg. Naz.* Orat. xxxix. tom. i. p. 636. *Ambroſ.* in Pſ. xxxvi. cxviii. *Hieron.* in Mal. iii. tom. iii. col. 1825. and lib. i. adv. Pelag. tom. iv. *Auguſt.* Reſponſ. ad Quæſt. i. Dulcit. tom. vi. et Enchirid. de fide, ſpe, et charitate, cap. 67, 68, 69. Ib. de Civit. Dei, lib. xx. cap. 25. Conſule etiam *Eſtium* in 1 Cor. iii. 13.

by

by water; ſo probably will the ſame cauſe bring on its deſtruction by fire. *For the heavens and the earth which are now—are kept in ſtore, reſerved unto fire, againſt the day of judgment, and perdition of ungodly men.* With regard to the certainty of the event, we are further informed, *that the day of the Lord will come, in which the heavens, being on fire, ſhall be diſſolved, and paſs away with a great noiſe; and the elements ſhall melt with fervent heat: The earth alſo, and the works that are therein, ſhall be burnt up; whereby all theſe things ſhall be diſſolved**. This is the account which St. *Peter* gives of this dreadful cataſtrophe. We have intimations concerning it in other parts of ſcripture; which, whatever intermediate objects they may have, muſt ultimately be meant of this. Thus God threatens in the law—*A fire is kindled in my anger, and ſhall burn unto the loweſt hell; and ſhall conſume the earth, with her increaſe, and ſet on fire the foundations of the moun-*

* 2 Pet. iii. 7, 10, 11.

tains *. This can have no other literal accompliſhment: Nor will this be any ſuperficial fire. It will penetrate to the very centre: And the mountains, which were the effect of the curſe, having had their tops brought down before, will now have their very foundations deſtroyed; ſo that no part of them ſhall be left remaining. So again—*The mountains quake at him; and the hills melt; and the earth is burned at his preſence; yea the world, and all that dwell therein—His fury is poured out like fire; and the rocks are thrown down by him* †.—*For all the earth ſhall be devoured with the fire of my jealouſy, ſaith the Lord* ‡.

That ſuch is to be the fate of this earth, which we inhabit, is likewiſe the ſubject of antient tradition: though whence derived is uncertain: Whether from theſe ſcriptures: Or whether, as is more probable, it did not owe its original to the firſt reſtorers of mankind after the flood; and

* Deut. xxxii. 22.
† Nahum i. 5.
‡ Zeph. iii. 8.

make

make one of the *dogmata Noachidarum*: Becauſe it is found, not only in the writings of the *Greeks* and *Romans*; and among other nations, who might have had intercourſe with the *Jews*; and have been acquainted with their ſcriptures; but it hath likewiſe been traced among ſuch as are not known to have had any communication with them; as the *Indians* in the eaſt; and the *Gauls* in the weſtern parts of the world*.

Nor did they entertain this opinion ſimply in itſelf: They went farther; and took in the end, and intent; for which the world was thus to be deſtroyed.

It was the confident perſuaſion of the *Greek* philoſophers, however they came by

* See authorities to this purpoſe in *Burnet's* Theory of the Earth. Eng. Treatiſe, book iii. chap. 3. Lat. Treatiſe, lib. iii. cap. 3. Out of many which might be inſtanced in, I ſhall ſelect only the following remarkable one out of *Ovid:*

Eſſe quoque in fatis reminiſcitur affore tempus,
Quo mare, quo tellus, correptaque regia cœli,
Ardeat, et mundi moles operoſa laboret.

Metam. l. I. 256.

it,

it, "that the world was to be purged and purified, by water and fire, alternately;" as they ſuppoſed. So *Origen* informs us, and quotes *Plato* for it *. And in delivering the ſenſe of both *Jews* and Chriſtians concerning this matter, *Origen*, juſt before, reaſons upon it, to the following effect. "Where is the abſurdity, ſays he, in anſwer to *Celſus's* objection, that, becauſe of an inundation of evil a perſon ſhould come, meaning Chriſt, to purify the world; and deal with every man, according to his deſerts? For it is unbecoming the Deity, not to put a ſtop to the corroding progreſs of vice, and renew his works." And elſewhere, reſuming the ſame ſubject, he ſays, "that it is not, that God's works, like thoſe of mortals, are ſo imperfect as to need amendment, that he redintegrates the world, and advances it to a better ſtate, by the purgations of water and fire; but that

* Ισασι δε και Ἑλληνες κατακλυσμῳ, η πυρι, την γην, καὶα τεριοδους, καθαιρομενην· ὡς και Πλαἰων ὡς ἑτω λεγει. κ. τ. λ. Contra Celſ. Lib. iv. p. 173.

his

his intent in doing this is, to ſuppreſs the growth of evil;" and perhaps totally to overcome and aboliſh it; as I am perſuaded he will do, when it will be moſt expedient for the good of the whole: And this is agreeable to *Origen's* opinion likewiſe. But to proceed, "God always means to correct former miſcarriages, by ſubſequent amendments. For though he diſpoſed all things in the moſt beautiful manner, and with the greateſt ſtability, at the creation of the univerſe; yet there needed a medical hand for the cure of thoſe peſtiferous diſeaſes with which the whole world was infected. God never did, nor ever will, neglect any means for this purpoſe, which it becomes him to uſe, in its proper ſeaſon, for a world ſo uncertain and changeable." That is, conſiſting of free-agents, whoſe wills are variable and capricious; but whoſe concurrence with the divine agency is neceſſary to bring about any reformation, even in individuals; and much more ſo in the whole. He goes on: "As the huſband-

man, in the cultivation of his ground, is differently employed, according to the demand of the different ſeaſons of the year; ſo God, if the compariſon may be allowed, diſpoſes the ſeveral ages of the world, as it were, into ſo many ſeaſons of the year; adapting his diſpenſations in each, to what is moſt becoming, for the improvement of the creation in general; which he alone hath perfect knowledge of; and alone can bring his works to an happy end *."

In confirmation of the foregoing prophecies, and of the traditions and perſuaſions, which prevailed among the antient heathens, as well as *Jews* and Chriſtians; there are many *phænomena* in nature, which forebode the deſtruction of the world by fire. Excluſive of the notion of a central fire, which ſome have entertained, it is certain there are vaſt bodies of this element kindled within the caverns of the earth; and perpetually conſuming the bowels of it. For the earth, being in a

* Origen, ib. p. 209.

cavernous ſtate, is thereby rendered the more ſuſceptible of fire. And theſe caverns muſt be conſiderable. For if the mountains were lifted up by earthquakes, they muſt have cavities beneath them, proportionable to their heights and bulks. Much air muſt be contained in theſe cavities; and having many vents, pervious to the winds, theſe muſt fan the ſubterraneous fires; which, if the earth were all compact and ſolid within, could not penetrate far into it. For there would then be no room for fire to be either nouriſhed, or generated.

Theſe fires, in many places, break out into burning mountains, and *volcanoes*; which caſt up ſuch prodigious quantities of igneous matter, that whole rivers of liquid fire have flowed from them, burning and deſtroying every thing in their way, to the extent of many miles: And thoſe perſons who are acquainted with the natural hiſtory of the earth, know that theſe appearances are not uncommon.

Etna

Etna is celebrated by the antients, as a flaming mountain from time immemorial*: Nor doth the *pabulum*, which feeds its flames, ſeem to be yet exhauſted.

About the middle of the ſixteenth century, it occaſioned an earthquake throughout the whole iſland, which laſted twelve days, and deſtroyed many of the buildings; whilſt noiſes, like the diſcharges of the heavieſt guns, were heard, and rent the earth; through the openings of which, the fire burſt out in ſuch quantities as to deſtroy every thing, five leagues about the mountain.

In the year 1669, another great eruption happened; when *Alphonſus Borellus*, a learned mathematician of *Piſa*, went into *Sicily*, to ſurvey the ravages which it had made. And he ſays, the quantity of

* Sir *William Hamilton* has given us the dates of the ſeveral eruptions both of *Etna* and *Veſuvius*, as far as they are recorded in hiſtory. Before Chriſt, four eruptions of *Etna* are recorded to have happened, and twenty-ſeven afterwards. Obſ. on *Veſuvius*, &c.

matter

matter thrown out of the mountain at that time, amounted to ninety-three millions, eight hundred thirty-eight thouſand, ſeven hundred and fifty cubical paces. This made a river of fire, ſometimes two miles broad, according to his computation; but according to the obſervation of others, the torrent of fire was ſix, or ſeven miles broad; and ſometimes ten, or fifteen fathoms deep; and forced its way into the ſea near a mile, preſerving itſelf alive in the midſt of the waters.

In the year 1682, the city *Catania* was deſtroyed by an earthquake and eruption of *Etna*, with the loſs of ſixty thouſand of its inhabitants. It was often ſo deſtroyed before; and afterwards, in the year 1693, it was totally overthrown by an earthquake, which deſtroyed in all forty-nine towns and villages, nine hundred and twenty-two churches, colleges, and convents; and near one hundred thouſand perſons were buried in their ruins. Sir W. H. ib. p. 59.

The

The prodigious damage done by the eruptions of this mountain, as well as the immenſe quantities of matter emitted by them, and the vaſt cavities they muſt neceſſarily have made within its bowels, may in ſome meaſure be conceived from the abundance of the *lava*, which, from time to time, hath iſſued from it. The laſt eruption of it was in 1766, when above four ſquare miles of a beautiful wood was deſtroyed by the *lava*. Ib. p. 70. The *lavas* of *Etna* are very commonly fifteen and twenty miles in length, ſix or ſeven broad, and fifty feet or more in depth. Nay, we are told, that the courſe of an antient *lava* is to be ſeen, which is not leſs than thirty miles in length, and is in many places fifteen miles broad. Ib. p. 83.

An eruption of *Veſuvius* is rendered famous, for its having ſuffocated *Pliny*, the philoſopher, whoſe curioſity to view it carried him ſo far, that he periſhed in the attempt to ſatisfy it. It hath of late been rendered more famous, from the diſcovery

of

of the ruins of *Herculaneum* and *Pompeii*, two cities that were buried under a dreadful ſhower of the contents of this mountain, diſcharged upon them by this *Volcano*. The latter was found ten or twelve feet under ground; the former city is, at preſent, no leſs than ſeventy, in ſome parts a hundred and twelve feet below the ſurface of the earth. This terrible eruption happened in the year of Chriſt 79. It hath been followed by twenty-eight more, from that time to this: But there are no accounts of any previous to it; though it is certain, beyond a doubt, that there had been eruptions before; becauſe the pavement of the ſtreets of *Pompeii* is of *lava*, and becauſe there is a deep *ſtratum* of *lava*, and burnt matter, even under the foundation of the town. Ib. p. 97.

Dion Caſſius gives a particular account of it; which I ſhall here inſert, as I find it tranſlated to my hand, by Dr. *Burnett*. "As a prelude to this tragedy, he ſays, there were ſtrange ſights in the air, and

after that followed an extraordinary drought. Then, ſays the hiſtorian, the earth began to tremble and quake; and the concuſſions were ſo great, that the ground ſeemed to riſe, and boil up in ſome places; and in others, the tops of the mountains ſunk in, or tumbled down. At the ſame time were great noiſes and ſounds heard; ſome were ſubterraneous, like thunder within the earth; others above-ground, like groans or bellowings. The ſea roared; the heavens rattled with a fearful noiſe; and then came a ſudden and mighty crack, as if the frame of nature had broke, or all the mountains of the earth had tumbled down at once. At length *Veſuvius* burſt, and threw out of its womb, firſt, huge ſtones; then a vaſt quantity of fire and ſmoke; ſo that the air was all darkened, and the ſun was hid, as if he had been under a great eclipſe. The day was turned into night, and light into darkneſs; and the frighted people thought the giants were making war againſt

againſt heaven, and fancied they ſaw the ſhapes and images of giants in the ſmoke, and heard the ſound of their trumpets. Others thought the world was returning to its firſt chaos, or going to be all conſumed with fire. In this general confuſion and conſternation, they knew not where to be ſafe: Some ran out of the fields into the houſes; others out of the houſes into the fields: Thoſe that were at ſea haſtened to land; and thoſe that were at land, endeavoured to get to ſea; ſtill thinking every place ſafer than that where they were. Beſides groſſer lumps of matter, there was thrown out of the mountain ſuch a prodigious quantity of aſhes, as covered the land and ſea, and filled the air; ſo that, beſides other damages, the birds, beaſts, and fiſhes; with men, women, and children, were deſtroyed within a certain compaſs: And two entire cities, *Herculaneum* and *Pompeios*, were overwhelmed with a ſhower of aſhes, as the people were ſitting in the theatre. Nay,

theſe aſhes were carried by the winds over the *Mediterranean*, into *Africa*, and into *Egypt* and *Syria*. And at *Rome* they choaked the air on a ſudden, ſo as to hide the face of the ſun. Whereupon the people, not knowing the cauſe, as not having yet got the news from *Campania* of the eruption of *Veſuvius*, could not imagine what the reaſon ſhould be; but thought the heavens and the earth were coming together; the ſun coming down, and the earth going to take its place above *."

There are frequent accounts of its raging in theſe latter ages. One of its moſt terrible eruptions, was that of the year 1737. The courſe of its *lava* extended ſix or ſeven miles from its ſource to the ſea, was fifty or ſixty paces wide, and twenty-five or thirty palms deep; and in certain hollows, or valleys, a hundred and twenty †.

* Dr. *Burnett's* Theory of the Earth, Book III. chap. vii. From *Dion Caſſius*, lib. lxvi.

† M. *Buffon*, Theorie, art. xvi. de volcans, et de tremblemens de terre.

There

There was another great eruption in the year 1767. In March 1770, there happened a new eruption, whence iſſued a *lava* two miles in length, and 2,700 paces in breadth. At the ſame time two vollies of ſtones, ſome not leſs than a ton weight, flew out of the crater to a conſiderable height; and ſo late as *May* 1771, it broke out afreſh near the ſame ſpot; alarmed the court at *Portici*, the place of the royal reſidence; but taking its courſe towards *Herculaneum*, their *Sicilian* majeſties, who went to view it, were eye-witneſſes of an aſtoniſhing caſcade of fire, the fall of which was perpendicular, and not leſs than ſixty feet.

We have accounts of burning mountains in many other parts of the world; though I queſtion whether there be any which in every reſpect—their antiquity and long continuance, their number, the frequency and force of their eruptions, and their wonderful and dreadful effects, can equal thoſe which are crowded in this

ſmall corner of the earth. It is not for nothing that theſe frightful ſpectacles, and ſevere ſcourges, hang over, and are inflicted upon this land. God grant the inhabitants may take warning by them, leſt they prove to be fore-runners of greater calamities and judgments of the like kind, which are ſuppoſed by many divines to be denounced againſt a great city in that neighbourhood, by the word of God, contained in the xviiith chapter of the book of Revelation!

God hath not left himſelf without a witneſs of this kind, in other parts of the world.

Mount *Hecla*, in *Iceland*, rages ſometimes no leſs than *Etna*, diſcharging prodigious ſtones, with a terrible noiſe; and at times boiling water likewiſe, in the midſt of froſt and ſnow.

In *Aſia*, and in the iſles of the oriental ocean eſpecially, there is a vaſt number of *volcanoes*. There is a famous one at Mount *Albours*, near Mount *Taurus*, the ſummit of

of which is always ſmoking, and ſometimes emitting flames, and burning matter, the cinders of which cover the whole plain.

In the iſland of *Ternate* there is a *volcano*, which caſts up great quantities of pumice ſtones. In *Auguſt* 1770, the *volcano* was accompanied by earthquakes, and dreadful ravages were made, both by the one and the other.

There are *volcanoes* in ſeveral other of the *Molucca* iſlands. The iſle of *Sorca*, one of them was formerly inhabited, and had in the centre of it a *volcano*, which came out of a very high mountain. In the year 1693, it poured out ſuch a quantity of bituminous, and other igneous matter, as made a lake of fire, which ſpread ſo as to cover the whole iſland; which was at length abſorbed by it, and quite diſappeared.

In *Japan*, and the iſlands about it, there are many burning mountains, on whoſe

ſummits there appears fire in the night, and ſmoke in the day-time.

In *Tandaja*, one of the *Philippine* iſlands, are found many ſmall fire-mountains, and one in the iſland *Marindica*, not far from them.

In the iſland of *Java*, not far from the town of *Panacura*, a fire broke out in the year 1586, for the firſt time, diſcharging ſuch quantities of burning brimſtone and *bitumen*, that above ten thouſand perſons in the country round about were deſtroyed thereby, caſting out great pieces of rocks, as far as the ſaid town; accompanied with ſo diſmal a ſmoke, that the ſun was overcaſt by it, and the day almoſt turned into night.

The Mount *Gounapi*, in one of the iſlands of *Baſida*, that had been burning about ſeventeen years, broke from the reſt with a terrible noiſe, in the month of *April* of the ſaid year 1586, throwing out a moſt dreadful quantity of burning matter, and great red-hot ſtones, of the length of a whole

a whole fathom; beſides ſuch a prodigious number of the ſmaller ſort, that they rendered the ſea in a manner unnavigable; whereby the fiſh were ſuffocated, and the waters boiled as if they were in a kettle, with fire under it.

There is a mountain on the iſland of *Sumatra*, which ſmokes and flames like *Etna*.

In one of the *Mooriſh* iſlands, lying ſixty leagues diſtant from thoſe of the *Molucca*, there happen very often earthquakes, with eruptions of fire and aſhes: And thoſe ſubterraneous fires have ſo great a ſtrength, that they caſt out glowing ſtones, which appear like whole trees; and the rocks themſelves are thereby burnt and conſumed; whilſt the mountain, which repreſents a frightful flame, roars with a terrible noiſe; as if there were a continual thunder, or diſcharge of the greateſt cannon.

There are alſo ſeveral burning mountains in the north of *Aſia*, on the eaſt ſide of the river *Jeniſcea*, in the country of the *Tongeſi*,

Tongeſi, ſome weeks journey from the river *Oby*, according to the relations of the *Muſcovites*; and likewiſe near another river, called *Peſida*.

There is a mountain, or rather cavern, near *Fez*, in *Africa*, that always is ſmoking, and ſometimes flames.

One of the *Verd* iſlands, called the *Fuogue*, is one great mountain, which burns continually, to that degree, that the *Portugueſe* often attempted to ſettle in it; but were never able to abide there.

In the *Canaries*, the pike of *Teneriffe*, which is ſuppoſed to be one of the higheſt mountains in the world, emits from the fire which burns in it, cinders, and large ſtones. From the top of it there iſſue ſtreams of melted ſulphur, which run down through the ſnow, in veins which are diſtinguiſhable at a great diſtance.

In *America* there is a great number of *volcanoes*, eſpecially in the mountains of *Peru* and *Mexico*. That of *Arequipa* is one of the moſt famous; which often cauſes

cauſes earthquakes; and theſe are more frequent in *Peru*, than in any other part of the world. There are ſo many *Volcanoes* in the *Cordilleras*, that they are almoſt continually attended with earthquakes. Next to that of *Arequipa*, the *Volcanoes* of *Caraſſa* and *Malaballo* are the moſt conſiderable. It would be tedious to recount all the burning mountains in this part of the world. Their number in all is ſaid to exceed ſixty.

There are ſeveral places where *Volcanoes* have happened in former times, which are now extinct; ſome of which have been taken notice of; ſuch as thoſe in the bay of *Santorini*, and others; which were only temporary; but the effects of which remain, in the new iſlands cauſed by them. And ſome old ones there are, which are now revived, if any credit be due to the publick papers.

In the mountains of the *Cordilleras* there are many precipices and apertures, which are black and burnt; and appear to have been

been the mouths of old *volcanoes*, which have ceaſed burning. There is ſuch another in mount *Ararat* in *Armenia*, called the abyſs.

On the other hand, many ſubterraneous fires have burſt out in theſe latter ages, in places where there never were known to have been any before, ſo that their number upon the whole ſeems to be rather increaſed than diminiſhed. Some of them have continued burning for ages; yet the *fomes* which ſupplies them is not ſpent; but they rage as much as ever.

Though theſe burning mountains are moſtly found in the hotter climates, in the torrid zone, or between the tropics; yet they are not confined to thoſe regions; ſome of them appearing in the moſt northerly parts of the world, and the moſt diſtant from the ſun: As in *North America*: In *Great Tartary*; and even in *Iceland*: Whence it is evident that they are generated within the bowels of the earth; and in all parts of it—that the ſun hath no immediate effect in the production of them;

and

and that they do not proceed from any external cauſe whatſoever.

Such is the ſtate of this earth which we inhabit! And ſuch the prognoſtics, which it contains, of the diſmal cataſtrophe which threatens it!

I ſhall conclude this account of the aſtoniſhing *phænomena*, which we have been here conſidering, with the reflections of a wiſe heathen.

Præterea, cum ſit hujus unius elementi ratio fœcunda, ſeque ipſe pariat; et minimis creſcat ſcintillis; quid fore putandum eſt in tot rogis terræ? Quæ eſt illa natura, quæ voracitatem in toto mundo avidiſſimam ſine damno ſui paſcit? Addantur iis ſidera innumera, ingenſque ſol: Addantur humani ignes, et lapidum quoque inſiti naturæ; attrita inter ſe ligna; jam nubium, et origines fulminum. Excedit profecto omnia miracula, ullum diem fuiſſe, in quo non cuncta conflagrarent*!

* Plinii lib. ii. cap. 107. Vide etiam Varenii Geogr. Nienwentyt Rel. Phil. Contemp. xxi. Sect. 18. & M. *Buffon*, ſupra, Art. xvi.

The

The divine omnipotence hath many other means in its power, many more than we can poſſibly conceive, by which the conflagration of the world may be brought to paſs.

That this general ruin ſhall be cauſed by the ſhock, or too near approach of a comet, as Mr. *Whiſton* conjectured, is what no man can pronounce impoſſible.

It was obſerved in the laſt chapter, that the earth is continually approaching to the ſun: And ſince this will ever continue to be the caſe, the conſequence in proceſs of time muſt inevitably be its conflagration.

But long before the time in which this event would naturally be brought to paſs by the laws of gravitation; there are many other cauſes that may accelerate this cataſtrophe. Even at the earth's preſent diſtance from the ſun, ſhould the ſolar rays be brought into a *focus*, and directed to ſome inflammable portions of the earth; that

that alone perhaps would be ſufficient for the purpoſe.

Who knows in what quantity thoſe electrical *effluvia*, which conſtitute what we call *auroræ boreales*; and which ſet the heavens, as it were, on fire, may hereafter ariſe? And ſhould they ariſe in a copious manner, as they ſeem of late years to become more copious than formerly they were known to be, what dreadful and diffuſive conflagrations would they ſoon produce!

To indulge one other conjecture: Should there be a ſolſtice, to continue for the ſame, or a leſs number of days, than in the time of *Joſhua* it did hours; I doubt not but it would put all the world in flames. And who knows, but that the miracle then wrought, was wrought for this end, among others, to convince mankind, how eaſily the Almighty could, and to forewarn them likewiſe how certainly he would, in his own appointed time, deſtroy the world in this manner?

Any

Any one of theſe cauſes muſt be allowed to be adequate to this end: There may be a concurrence of them all; and of many others, co-operating with them, in the production of it: Or indeed, without the uſe of any ſecond cauſes at all, the ſovereign Arbiter and Diſpoſer of the univerſe may, by the power of his will alone, bring his greateſt purpoſes to paſs.

Theſe conſiderations are only mentioned to facilitate our belief of what he hath foretold in his holy word; and that we may be the more diſpoſed to prepare ourſelves, in a ſuitable manner, againſt this great and terrible day of the Lord. For though the end of the world may not be ſo near, as to happen before this generation paſſeth away: Yet let it happen when it will, we ſhall not be idle, nor unconcerned ſpectators of it. *For behold, the day cometh,* ſaith the prophet *Malachi, that ſhall burn as an oven, and all the proud, yea, and all that do wickedly,* even all from the beginning

beginning of the world, to the end of it, *ſhall be ſtubble; and the day that cometh ſhall burn them up, ſaith the Lord of hoſts; that it ſhall leave them neither root nor branch* *—*When the Lord Jeſus ſhall be revealed from heaven, with his mighty angels, in flaming fire, taking vengeance on them that know not God; and that obey not the goſpel of our Lord Jeſus Chriſt: Who ſhall not be puniſhed with everlaſting deſtruction, from the preſence of the Lord; and from the glory of his power* †.

And the application which the apoſtle St. *Peter* makes of this conſideration is this: *Seeing then, that all theſe things ſhall be diſſolved, what manner of perſons ought ye to be, in all holy converſation and godlineſs; looking for, and haſting unto the coming of the day of God; wherein the heavens, being on fire, ſhall be diſſolved; and the elements ſhall melt with fervent heat* ‡?

* Mal. iv. 1.
† 2 Theſſ. i. 7, 8, 9.
‡ 2 Pet. iii. 11, 12.

By holy converſation and godlineſs, we ſhall be no ſufferers in the univerſal calamity; but may with confidence look for, and even haſte to meet, the coming of the day of God; *being diligent that we may be found of him in peace*; as the ſame apoſtle adviſeth. For, as another inſpired writer informs us, *The Lord himſelf ſhall deſcend from heaven with a ſhout; with the voice of the arch-angel; and with the trump of God: And the dead in Chriſt ſhall riſe firſt: Then we*, ſays he, *which are alive, and remain, ſhall be caught up together with them in the clouds; to meet the Lord in the air; and ſo ſhall we ever be with the Lord**.

Thus, by framing our lives as becomes thoſe that wait for theſe things; whether we ſhall be of the number of the quick, or dead; we ſhall be changed in a moment; and be removed into regions of ſecurity; out of the reach of the deſtroying element: Or if we ſhall not entirely eſcape its fury;

* 1 Theſſ. iv. 16, 17.

it

it will affect us no otherwiſe, than in purging away our droſs; and refining us from our ſins; *as ſilver is tried and refined in a furnace of earth, purified ſeven times.* For the prophet tells us, that the *Lord, at the day of his coming, is like a refiner's fire; and like fuller's ſoap: And that he ſhall ſit as a refiner, and purifier of ſilver; and ſhall purify the ſons of Levi; and purge them, as gold and ſilver* *.

"And then, when by that fire, probably, the portion of matter, which was in the bodies of all who have lived upon earth, ſhall be ſo far refined and fixed, as to become both incorruptible, and immortal; then they ſhall be made meet for the ſoul, that formerly animated them, to re-enter every one into its own body; which ſhall be then ſo moulded, as to be a habitation, fit to give it everlaſting joy, or everlaſting torment †."

* Biſhop Burnet, Exp. of the Articles, Art. iv. p. 67.
† Mal. iii. 2, 3.

On either of the foregoing ſuppoſitions, whether at this great day, we ſhall be found alive; or, as is moſt probable, dead in the Lord; we ſhall be qualified for the ſucceeding happy ſtate.

CHAP.

CHAP. XIII.

Of the Renovation of the Earth.

IT was in order to its melioration, that the earth was deſtroyed by water: And it is for the ſame gracious end, that it is to be deſtroyed again by fire; that by undergoing theſe two different kinds of purgation, it may at laſt be reduced to ſuch an improved and happy ſtate, as was ſketched out in the primitive paradiſe; which was an emblem, and an earneſt of it: And this is an end worthy of the great Creator, and wiſe Governor of the world; and juſtifies his ways to men, in

the ſevere judgments, which he hath, and will have, inflicted upon the world.

That the whole frame of nature, the whole ſyſtem of the univerſe, is all to be reſtored to this renovated ſtate, is what the ſcripture, which hath hitherto been our guide; and which, eſpecially with regard to the view before us, muſt neceſſarily be our guide unto the end—This is what the holy ſcripture, I ſay, which never miſleads us, gives us repeated aſſurances of.

This important change will be ſo great and univerſal, that it is expreſſed by the inſpired writers in the terms of a new creation. *For behold, ſaith the Lord*, by his prophet, *I create new heavens, and a new earth:* And, *as the new heavens, and the new earth, which I will make, ſhall remain before me, ſaith the Lord; ſo ſhall your ſeed, and your name remain* *.

It is with reference to this promiſe, contained in the words of the prophet, that

* Iſai. lxv. 17—lxvi. 22.

St.

St. *Peter*, after he had foretold the general conflagration, presently subjoins—*Nevertheless, we, according to his promise, look for new heavens, and a new earth, wherein dwelleth righteousness* *.

St. *John*, the beloved disciple, was vouchsafed a vision of nature, in this its renovated state. In a former vision, he had seen *a great white throne, and him that sat upon it; from whose face the earth and the heaven had fled away, and there was found no place for them* †.

The old face of nature being totally destroyed, its place could not be found. After this succeeds an account of the final judgment. Then follows, *And I saw a new heaven, and a new earth: For the first heaven, and the first earth, were passed away; as before mentioned.* And again, *The former things are passed away: And he that sat upon the throne said, Behold I make all*

* 2 Pet. iii. 13.
† Revel. xx. 11.

things new. And in confirmation of the certainty of this great change, *he ſaid unto me, Write: For theſe words are true and faithful.* Therefore enter them upon record, as what, in its due time, ſhall be faithfully and fully accompliſhed. And as a ſtill farther ratification of it, the inſpired writer adds, *He ſaid unto me, It is done* *. This decree is as firmly eſtabliſhed in the divine council, as if it were already executed.

We have alluſions to this renovated ſtate in ſeveral other parts of ſcripture. Thus we are given to underſtand, that the preſent ſtate of the world is not permanent. *For the faſhion, form, or,* σχημα, the ſcheme, or plan, *of this world paſſeth away* †. The preſent form of the world is to be changed, and it is to be modeled upon a different plan. And that the world is not to be annihilated; but only to undergo a change, we learn elſewhere. *Thou,*

* Revel. xxi. 1, 4, 5, 6. Comp. 2 Cor. v. 17.
† 1 Cor. vii. 31.

Lord,

*Lord, in the beginning, haſt laid the foundation of the earth; and the heavens are the work of thy hands. They ſhall periſh, but thou ſhalt endure. They all ſhall wax old, as doth a garment; and as a veſture ſhalt thou change them, and they ſhall be changed: But thou art the ſame, and thy years ſhall not fail**. From this compariſon it ſufficiently appears, that this will not be a partial, but a total change.

Our Saviour likewiſe ſpeaks of a regeneration†; and promiſeth, that *Elias ſhall come, and reſtore all things*‡. For it is poſſible, there may be a coming of his yet future. Our Lord ſpeaks of it, as ſuch, at the ſame time that he obſerves, he was once come already, in the perſon of *John*, the Baptiſt. And that there ſhall be a reſtoration of all things, the apoſtle

* Pſ. cii. 25, 26, 27. Heb. i. 10, 11, 12. Ειλισσεις δε τους ουρανους ουχ ινα απολεσῃ τυλος; αλλ' ινα καλλιονα; εξαρῃ. Cyril. catech. 15.

† Matt. xix. 28, 29.

‡ Ch. xvii. 11.

is

is expreſs: For, ſpeaking of *Jeſus*, he ſaith, *Whom the heavens muſt receive, till the times of the reſtitution of all things; which God hath ſpoken by the mouth of all his holy prophets, ſince the world began* *. Theſe times he had juſt before called *times of refreſhing*. And it is moſt probably in alluſion to this renovation of the inanimate creation, that the apoſtle ſpeaks of its being *made ſubject to vanity*; and that the time will come, when it ſhall *be delivered from the bondage of corruption unto the glorious liberty of the children of God* †.

This reſtoration of all things, or renovation of all nature, having been foretold by the mouth of all the prophets, ſince the world began; no wonder the tradition concerning it was ſo antient, and univerſal; not only amongſt *Jews* and chriſtians, but among the heathens likewiſe: Among the ſeveral ſects of the *Greek* phi-

* Acts iii. 21.

† Rom. viii. 20, 21.

loſophers,

loſophers, *Stoicks*, *Pythagoreans*, *Platoniſts*; who all held it.

It had ſpread likewiſe through the eaſtern, or barbarick philoſophers, as the *Greeks* were pleaſed to call them, whom they might have owned to have been their maſters, and from whom they probably got it; the *Perſians*, *Chaldeans*, *Egyptians*, and *Indian Brachmans*; who had all imbibed this notion of the renovation of the world.

Some held that this great change would precede the general conflagration; others, that it would be ſubſequent to it. Of the former opinion were the *Platoniſts*. The *Stoics* maintained the latter: But both opinions are reconcilable; as it is probable, there will be ſo great a melioration in the ſtate of man and nature before the conflagration, as may be truly reckoned a renovation of both: And, on the other hand, there certainly will be ſuch an entirely renovated ſtate, after the earth hath undergone this thorough purgation.

It is obſervable, that the terms, in which the *Greek* philoſophers ſpeak of this happy ſtate, generally are παλιγγενεσια, and αποκαταστασις; the very ſame that are made uſe of by our Saviour, and the apoſtle, in the paſſages above-cited, concerning a *regeneration*, and *reſtoration*; and they are accordingly ſo tranſlated *.

Theſe are relative terms: what elſe therefore can they refer to, but to the firſt happy ſtate of things? St. *John* adds a circumſtance relating to the new earth, that in it *there was no more ſea* †. So we tranſlate. The literal ſenſe of this paſſage may be thought inadmiſſible; and generally, I believe, is ſo thought ‡: And accordingly the words are interpreted allegorically, as ſignifying, that the ſea being the emblem of trouble, diſquiet, and inconſtancy; by

* Matt. xix. 28. Acts iii. 21.

† Revel. xxi 1.

‡ Dr. *Burnet* hath endeavoured to accommodate this paſſage in the literal ſenſe to his ſyſtem. Moſt others underſtand it figuratively.

there

there being no ſea is meant, that the renovated world ſhall not be ſubject to the viciſſitudes, commotions, and diſorders, which this world is agitated and troubled with: But there ſhall, in this future bleſſed ſtate, be the utmoſt tranquillity, ſtability, and certainty of all things; both in the natural and moral world. But, admitting this ſenſe, I do not ſee, upon mature conſideration, how the excluſion of the literal ſenſe can be juſtified, as it is the foundation of the metaphorical ſenſe; and as we cannot ſay it implies a contradiction. Nor can we conclude, becauſe the ſea makes ſo conſiderable, and, as we may think, ſo neceſſary a part of the world, which we now inhabit; therefore that it is impoſſible for the great Creator to make a world without a ſea.

But there being no ſea in the new earth, ſeems really to be no more than the natural, and almoſt neceſſary conſequence of the conflagration; during which, it is probable, the fire will rage to that degree, as in a great

a great meaſure at leaſt to conſume its contrary element: Agreeably to the prophecies—*That ſaith to the deep, Be dry. At my rebuke, I dry up the ſea*—And again, *He rebuketh the ſea, and maketh it dry**.

As to the conſequences of this notion, I do not ſee why it may not be entertained, without making one's ſelf anſwerable for them; becauſe, if there be ſufficient grounds for an opinion, it is not neceſſary to defend it through all its poſſible conſequences: And the ground upon which this opinion reſts is the authority of ſcripture.

But it is poſſible the inhabitants of the new earth may not want the ſea, nor any of its productions; any more than many, who live in inland countries, do at preſent, having all the neceſſaries and conveniences of life within themſelves; and ſeldom, if ever, being obliged to it for any thing. And this was more generally the caſe, in times of greater ſimplicity; when people were content with the pro-

* Iſai. xliv. 27—l. 2. Nahum i. 4.

duce

duce of their own labour, on the ſpot which they cultivated; before the riſe of commerce and navigation, the importers of ſuperfluities and luxury.

If it be ſaid, that in caſe there be no ſea, there will be no rivers: That conſequence doth not neceſſarily follow. For it is poſſible the new earth may be ſo formed, as, like the primitive earth, to have no rain; as it moſt probably will have no mountains, and, like it, be watered by a miſt ariſing from the ground.

Theſe miſts, being collected together, may form rivers, which this new earth will not be deſtitute of. For in the deſcription of it, we read of *a pure river* of water, *the water of life, clear as cryſtal, proceeding out of the throne of God, and of the Lamb**.

Theſe rivers, when they have run their courſe, may ſink into ſubterraneous receptacles; as we know ſome rivers, in

* Revel. xxii. 1.

this,

this, and other countries, do at preſent; loſing themſelves in the ſame manner: And from thence they may riſe in ſprings, and circulate through the earth. Or, without that ſuppoſition, the miſts may become brooks; *the brooks become rivers, and the rivers become a ſea**.

For after all, it is not certain from the text, that the new earth will be abſolutely and altogether without a ſea; and never to have any. The words in the original are. Και η θαλασσα ουκ εστιν ετι. Which may be rendered, *There is no ſea as yet*: Or, *The ſea is not as yet.* In the *Alexandrian* MS. the words are—την θαλασσαν ουκ ιδον. *I ſaw no ſea.* At the time the viſion was vouchſafed, which was at the commencement of the new heavens, and new earth, there might be no ſea to be ſeen; for, according to the other reading, there was none, as yet: But it doth not from thence neceſſarily follow,

* Eccluſ xxiv. 31.

there

there never would be any. The contrary rather is implied; otherwiſe, why ſhould the word *yet* be added? *The ſea was not as yet* formed, or collected: Not as yet for a while. This was to be a work of time. The rivers were not then, immediately upon the firſt formation of the new earth, collected into ſeas. This could not be done all at once. Some ſpace of time would be requiſite for that purpoſe: And the turn of the expreſſion ſtrongly intimates, that, in proceſs of time, the rivers would be gathered into ſo conſiderable a body, as to become a ſea. Dr. *Keil* hath calculated, that, ſuppoſing the channel of the ſea to be dry, or empty; and the number of rivers to be the ſame, and their courſe the ſame, both for quantity of water, and ſwiftneſs, as at preſent; they would not fill the great channel of the ocean, as full as it is at preſent, in a leſs ſpace of time than 812 years*. Well therefore might

* Dr. *Keil's* Examination of Dr. *Burnet's* Theory, p. 129.

St. *John* ſay, at the infancy of the new earth, *there was no ſea*; or, *I ſaw no ſea, as yet.*

This text affords a very remarkable inſtance of two original readings of the ſame paſſage, as I take them to be; the words of which are ſo different, that they cannot be ſuppoſed to have varied from each other by the error of tranſcribers. They differ greatly in the form of the expreſſion; and yet agree in the fact, and in the ſubſtance of it: And they ſerve to illuſtrate each other, and to clear up the full import of the paſſage. The one ſays poſitively; *There is no ſea*: Which is the ſtile of an authoritative writer. The other ſays, *I ſaw none*: Which is the ſtile of one, who writes from eye-ſight, and obſervation. The one adds, *as yet*, implying that it was then too ſoon to expect any; but that in due time ſeas would be formed: That addition would have been needleſs and improper in the other. From all which it ſeems moſt natural to ſuppoſe,

poſe, that St. *John* himſelf, at one time wrote in one manner, and in another manner at another time*.

To proceed: In the account of the new heavens, and new earth, we read of a paradiſe, in its deſcription much reſembling the primitive one; but abounding more with the fruit of immortality; *the tree of life*, bearing *twelve manner of fruits*; *and yielding her fruit every month*; *and the leaves of the tree being for the healing of the nations* †.

In the viſions of *Ezekiel*, which moſt probably are to have their accompliſhment in ſome future ſtate of the church; the deſcription of the waters which iſſue out

* See the Evidence of Chriſtianity deduced from Facts, Diſc. VI. On the advantages of various readings.

† Rev. xxii. 2. The words of this verſe would appear to have an eaſier, and more conſiſtent ſenſe, if tranſlated thus.—*In the midſt of the ſtreet thereof*, that is, of the new Jeruſalem, ſee ch. xxi. 23—27. *and a river* being *on either ſide of it*, the tree, he ſhewed me, ſee ver. 1. *the tree of life, bearing twelve* manner *of fruits*; *yielding its fruit every month*: *And the leaves of the tree being for the healing of the nations.*

of the temple, very much reſembles the deſcription of the water of life in the *Revelation*; in ſome circumſtances eſpecially: In which it is ſaid, That *on the bank of the river grew very many trees, on the one ſide and on the other, even all trees for meat; whoſe leaf ſhall not fade, neither ſhall the fruit thereof be conſumed. It ſhall bring forth new fruit according to his months; becauſe their waters they iſſued out of the ſanctuary: And the fruit thereof ſhall be for meat, and the leaf thereof for medicine* *.

As theſe texts ſeem to be parallel, and as ſuch may be interpreted, the one by the other; there might be one principal tree, from which others might be propagated; which might grow on the banks of the rivers which ran on each ſide of it.

We may farther obſerve, that the gradual increaſe of the waters in *Ezekiel* †, gives countenance to the above conjecture, concerning the like increaſe of water in

* Ezek. xlvii. 7. 12.

† Ib. ver. 1—12.

the

the future earth; to that degree as to become a ſea. And in both places, the great plenty, variety, and excellence of the fruit of the trees of life, and of all trees for meat; the fruit of which ſhall not be conſumed.—This confirms an obſervation made above*; I ſhould rather ſay, a conjecture, that *Adam* in paradiſe was nouriſhed by the fruit of trees only; and would have had no occaſion for any other food, had he preſerved his innocence; upon the loſs of which it was, that he was reduced to the neceſſity of getting his food out of the earth, by the ſweat of his brow.

From both theſe paſſages likewiſe, compared with the deſcription of paradiſe, in the ſecond chapter of *Geneſis*, it appears, that the ſtate of the new heavens and earth will be a reſtoration of the paradiſiacal ſtate; but much improved, exalted, refined, and ſpiritualized.

The ſame likewiſe appears from the other characters of this renovated ſtate.

* See Chap. III.

The ſalutiferous quality of the leaves of the tree of life, which were *for medicine* *, and *for the healing of the nations* †; together with its being ſaid, That *God ſhall wipe away all tears from their eyes; and there ſhall be no more death, neither ſorrow, nor crying; neither ſhall there be any more pain* ‡.—Theſe words ſhew, that in this ſtate, human nature will be healed of all its infirmities and complaints—will be reſtored to perfect eaſe, both of body and mind; and be exempt from every evil of every kind: Which is confirmed by what is added, That *there ſhall be no more curſe* of any kind; but that every curſe ſhall ceaſe, and be no more ‖. This is an expreſs declaration of a perfect recovery from all the maladies and ill conſequences of the fall; and a complete reſtoration of the paradiſiacal ſtate.

* Ezek. xlvii. 12.
† Revel. xxii. 2.
‡ Ch. xxi. 4.
‖ Revel. xxii. 3. Και παν καταθεμα ουκ εσαι ετι.

That

That paradiſe, which the ſecond *Adam* took poſſeſſion of, as ſoon as he was diveſted of the burden of the fleſh, ſeems to anſwer that paradiſe which the firſt *Adam* was turned out of; and a reinſtating of our nature, not only in the perſon of our Redeemer, but in that of his penitent fellow-ſufferer, and all other fit objects of it, as far as circumſtances would admit; and a re-placing of us, if not in the very ſame, yet in a paradiſe not inferior to the primitive one.

Other characters go farther. The deſcription which we have of the new *Jeruſalem, deſcending out of heaven, having the glory of God*; therefore not of earthly origin; its ſplendor and beauty; the richneſs and magnificence of its ſtructure; and the glorious privileges of its inhabitants *—Theſe characters have nothing correſponding to them in the primitive paradiſe; They muſt, therefore, belong to

* Rev. xxi. 10.

a more advanced ſtate. It being farther ſaid, that *the city had no need of the ſun; neither of the moon to ſhine in it: For the glory of God did lighten it; and the Lamb is the light thereof: And the nations of them that are ſaved, ſhall walk in the light of it**. —Whatever be the full import of theſe expreſſions, we may ſafely infer, that they indicate this to be a very enlightned ſtate; far beyond any degree of knowledge that can be ſuppoſed to have been vouchſafed to *Adam*; and much more beyond what his dim-ſighted deſcendants can, or ever could have any adequate conceptions of. *The new heavens and new earth*, are deſigned for the habitation of *juſt men made perfect*; for *the inheritance of the ſaints in light*; and will excel this preſent world, as much as our glorified bodies will excel thoſe we now live in.

The inhabitants of this new world will be the *dead* in *Chriſt*, who *ſhall riſe firſt*;

* Rev. xxi. 23, 24.

To whom ſhall be joined, thoſe who ſhall be found *alive, and remain at the coming of the Lord*; who being *changed in a moment*, ſhall be *caught up, together with* the children of the firſt reſurrection, *in the clouds, to meet the Lord in the air*. And ſo ſhall they ever *be with the Lord* in this glorified ſtate *. In order, perhaps, to fill up a vacancy that had been made in the ſcale of beings; and to ſupply the place of thoſe once happy and glorious ſpirits, who kept not their firſt eſtate, and were not made ſuch objects of mercy as fallen man was.

But theſe are not ſubjects for our reſearches. Such knowledge is too wonderful and excellent for us, and far above our comprehenſion. We may, however, apply the glympſe which is given us of this glorified ſtate, towards the raiſing of our deſires, and exciting us to uſe all our endeavours, that our names may be written in the book of life; and that we may be

* Theſſ. iv. 15, 16, 17. 1 Cor. xv. 51, 52.

admitted

admitted among the inhabitants of the new *Jeruſalem.*

Upon the whole, this ſeems to be the conſummation of a ſtate, that was originally planned for man; into which he was initiated when he was placed in paradiſe, and in which he would have been continued, going on *from ſtrength to ſtrength* *, being changed *from glory to glory* †; and proceeding from one degree of improvement to another, without any intermiſſion, or interruption in his courſe; till, perhaps ere this time, he would have arrived at a ſtate of perfection, dignity, and felicity, not inferior to that repreſented in the viſion of the new heavens and new earth: Had not a malicious enemy, envious of the happineſs of mankind, ſeduced the firſt parents of the human race from their obedience; and by that means thrown the whole plan into confuſion; obſtructed and

* Pſ. lxxxiv. 7.
† 2 Cor. iii, 18,

retarded

retarded the execution of it; and, as far as lay in his power, defeated and fruſtrated the great and beneficent end, for which a whole world had been framed and created.

This cauſed an alteration in the divine council and proceedings. The great Author of nature would not ſuffer his fair creation to be all ſpoiled and ruined; nor the creature whom he had made for happineſs, to be loſt in miſery. He therefore immediately contrived the means of his recovery, together with the reſtoration of the whole creation, with the improvement of both the one and the other*.

* "God hath appointed a method for adopting us into his family again, after we have caſt ourſelves out of it; and for reſtoring and raiſing us gradually to the ſame, and greater likeneſs to him, and favour with him, than even our firſt parents ever enjoyed.—For though they had preſerved their innocence, they could have no claim to any farther favour: But we, though we have loſt it with them, have now a claim to eternal happineſs, through the promiſe of God in Chriſt." Archbiſhop *Secker* on Church Cat. Lect. ii.

Towards

Towards the accompliſhment of this gracious deſign, every diſpenſation of every kind; every judgment, as well as every inſtance of mercy; every diſpoſition of the whole, and of every part, which we have been taking a ſurvey of; was, in the divine purpoſe, ultimately intended. And we have ſeen how he bringeth all his purpoſes to paſs; how his power ruleth over all; and finally triumphs over the rebellious adverſary of his will, and miſchievous diſturber of his works, whom he can controul as he thinks fit; can bind and looſe as it pleaſeth him; nor could this wicked ſpirit have given the leaſt diſturbance to any part of his creation, without the permiſſion of the Sovereign Lord, Maker, and Governor of it; for the probation of the creature he had made; and for his own glory in the end, in bringing good even out of evil.

In this great proceſs, we may obſerve the analogy that runs through the whole, and every part of it, between the natural and

and moral world—What a ſtrict connection there is betwixt them—How their fates and fortunes reſult from, and are dependent, the one upon the other—How they both came together into being—How they fell together—Have ever ſince kept pace with each other, and are finally to riſe together again. It is eſpecially obſervable, how malignant and contagious the nature of moral evil is; and what a train of phyſical evils it hath been productive of. It is, on the other hand, a ſubject that deſerves to be contemplated with the moſt grateful ſenſe of the ineſtimable benefits of it; how the redemption of man and nature are carried on together; for the ſubduing of all kinds of evil, both natural and moral, upon one large and comprehenſive plan, for the recovery of the whole creation, from this complicated malady, under which it all groans together.

When we enter into a ſerious meditation on theſe things, we can never ſuffi-

ciently admire and adore the wonderful diſplay of the divine attributes, which every where appear, throughout the whole exiſtence of the world; from its creation to its final renovation—Of that creative and over-ruling power, which at firſt ſpake all things into being; and which, when it thinks fit, exerts itſelf no leſs in the deſtruction, and reproduction of them; that ſupports the earth at one while, and *bears up the pillars of it*; and at another, can devote it to deſtruction; and after that, can ſay unto it, *Come again*, and be reſtored! That can turn, and diſpoſe of it, as he thinks fit; *wiping it as a man wipeth a diſh, and turning it upſide down**. The prophet aſks the queſtion, *Who hath meaſured the waters in the hollow of his hand? And meted out the heavens with a ſpan, and comprehended the duſt of the earth in a meaſure; and weighed the mountains in ſcales, and the hills in a balance?*

* 2 Kings. xxi. 13.

Who

Who but the Lord God omnipotent? The Lord mighty in ſtrength: Before whom *the nations are as a drop of a bucket, and are counted as the ſmall duſt of the balance*; and who *taketh up the iſles, as a very little thing?* Before *whom all nations are as nothing, and all the inhabitants* of the earth *are counted leſs than nothing, and vanity. Who ſitteth upon the circle of the earth, and the inhabitants thereof are as graſs-hoppers* *. *Who doth whatſoever pleaſeth him, in heaven, and in earth, in the ſeas, and in all deep places* †. *Nor can any ſtay his hand, or ſay unto him, What doſt thou* ‡? Such is the divine omnipotence, and immenſity! And ſo all-controuling and irreſiſtible is his will!

How much more excellent and adorable ſhall we eſteem theſe divine attributes, when we reflect that they are guided by infinite wiſdom? Which is manifeſt, not

* Iſai. xl. 12, 15.
† Pſ. cxxxv. 6.
‡ Dan. iv. 35.

only

only in the original contrivance and diſpoſition of the whole ſyſtem of the univerſe, in all, and every part of which, deſign, ſymmetry, and proportion, are plainly diſcernible: But the ſame wiſdom appears at the helm of this ſyſtem, ſuperintending, conducting, and ſupporting it, from the beginning, to the end of its duration, through all the various changes and revolutions, which it undergoes; ſome of which threaten its abſolute and irremediable deſtruction; from which notwithſtanding it recovers, and what ſeemed fatal to it proves a benefit; every event, and every the leaſt incident, being made to carry on one general deſign, the melioration of the whole, the great end ever ultimately in view. If the atheiſt would for once lay aſide his prejudices, and conſider theſe things impartially; he could not ſurely forbear acknowledging, that there is a great Architect, *who hath made the earth by his power, eſtabliſhed the world by his wiſdom, and hath ſtretched*

*ſtretched out the heavens by his diſcretion**. And that *he is mighty in ſtrength and wiſdom, wonderful in counſel, and excellent in working*†: *Fire and rain*, contrary elements, *ſnow and vapour, ſtormy winds*, and all meteors, *mountains and hills, and all parts of nature, fulfilling his word*‡.

Laſtly, we may here behold, and adore, the goodneſs and ſeverity of God—his goodneſs, in moving him to create this world out of nothing; and in communicating to it ſo much goodneſs as it had, when it firſt came out of his hands—His ſeverity towards the old world, in deſtroying it with its inhabitants—His repeated goodneſs to the new, by reſtoring it in a more improved ſtate—His ſeverity again, in the future deſtruction which he threatneth to bring upon it by fire—" And his final goodneſs in the promiſe he hath made of new heavens, and a new earth,

* Jer. x. 12.
† Job xxxvi. 5. Iſai. xxviii. 29.
‡ Pſ. cxlviii. 8, 9.

to ariſe out of the aſhes of the former. In all which diſpenſations, mercy rejoiceth againſt judgment, and triumphs over it. The breadth, and length, and depth, and height of theſe divine attributes is above all comprehenſion.

If any of the great *phenomena* of nature have been here accounted for, in a more ſatisfactory manner, than hitherto hath been done—If the original formation of the earth, and the ſeparation of the dry-land from the water, by means of the earth's rotation on its axis, appears probable—If the origin of the mountains, proceeding from an univerſal earthquake, as the effect of God's diſpleaſure at man's firſt tranſgreſſion, hath been pointed out—If the fountains of the great abyſs have been diſcovered, whence water was chiefly brought to drown the world; and whither, when it had ſerved that purpoſe, it was remanded—If the manner whereby this was done, and the waters were eaſily brought to overflow the earth, hath been plainly

plainly ſhewn—If the appointment of the ſeaſons hath been rationally accounted for; and the time and occaſion of this diſpenſation hath been aſcertained—If it appears, that the element of water hath been gradually decreaſing ever ſince the deluge; whereby the divine covenant, not to deſtroy the world again, by this means, is more and more confirmed; and its preſervation from being deſtroyed by water is rendered daily more ſecure—If upon the whole it appears, there is leſs water in the earth at preſent, than there was in the antediluvian world; and therefore that it doth not follow, there was not water enough to deluge the world at the flood, becauſe there may not be enough for that purpoſe at preſent—If it hath been proved, that the earth is growing more and more conſiderable both in bulk and goodneſs—that it is drawing more and more towards a level, the mountains lowering, and the vallies riſing; and that all parts of it are in an improving and meliorating ſtate—If the future conflagra-

tion of the whole terraqueous globe, which is in ſcripture foretold, hath been rendered probable in nature, from various cauſes, all or each of which may effect it—If, from the conſiderations which have been offered, we are convinced, that the end of this dreadful cataſtrophe is in order to a renovation; and at length to reſtore it to that ſtate, which was originally planned in the divine counſel, for the habitation of the creature man; and upon which *Adam* entered, when he was placed in paradiſe; in which the firſt lines of this happy ſtate were ſketched out—If theſe, or any of theſe great revolutions have been here placed in a better light than they before appeared in; let this be aſcribed to thoſe divine oracles, whence this account hath been drawn; and which have held out the clue which hath been followed in the inveſtigation of thoſe diſcoveries. This affords an additional proof of the divine inſpiration, excellence, and authority of the holy ſcriptures; and an

additional motive to the ſtudy of them. It ſhould likewiſe raiſe our minds, to a due apprehenſion of the high value of them; as they contain ſuch treaſures of natural, as well as divine knowledge, as will in vain be ſought for elſewhere; and ſuch as we may not otherwiſe have any conceptions of.

The nobleſt end that we can propoſe to ourſelves, and the moſt worthy and becoming the purſuit of rational beings, is, in our ſeveral ſtations and capacities, to co-operate with the deſigns of Providence, as far as we can apprehend them, in promoting the improvement and melioration of the world; which every one hath in his power to do, in ſome meaſure, one way, or other: If he hath not a genius, or abilities, to improve the natural ſtate of it; he can mend it in its moral capacity: He can mend it in one individual at leaſt: Every man, if he pleaſes, can mend it in himſelf.

We

We ſhould therefore, one and all, uſe our utmoſt diligence, and apply our beſt endeavours, to *overcome evil with good*; in every reſpect, both in ourſelves, and in the world about us: We ſhould make it our conſtant rule, αιεν αριϛευειν, be ever preſſing forward towards the mark, and going on unto perfection; how much ſoever we may want of it at preſent, and how far ſoever we may fall ſhort of attaining it hereafter.

I ſhall conclude with the apoſtle's advice—*Wherefore, beloved, ſeeing that ye look for ſuch things—for new heavens, and a new earth, wherein dwelleth righteouſneſs—be diligent that ye be found of him in peace, without ſpot, and blameleſs* *.

* 2 Pet. iii. 14.

THE END.

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